September 1931

Drug Markets

Established 1914

The Magazine of the Manufacturing Drug Trade

The Magazine for Manufacturers of Pharmaceuticals, Toilet Preparations, Proprietary Medicines, and Flavors. Of primary interest to executives in direct charge, or supervising purchasing, production, and technical control, and for executives concerned with general administrative problems of the industry.

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NEW FEATURES

New features in Drug Markets during coming months will be a continuation of the series starting in this issue on Our Most Effective Advertisement; an entirely new series on the leading drug manufacturing never written before. In addition more authoritative material on cosmetics will appear shortly in a new series of articles by a real cosmetic chemist.

VOL. XXIX

DRUG MARKETS, INC.
PUBLISHERS

NUMBER 3

Publication Office, 28 Renne Ave., Pittsfield, Mass. Editorial and General Office, 101 W. 31st St., N.Y. City

Editor
THOMAS R. FARRELL

Business Manager
FRAZER V. SINCLAIR

PUBLISHED MONTHLY AT PITTSFIELD, MASS., SUBSCRIPTION PRICE, TWO DOLLARS A YEAR, IN ADVANCE, POSTAGE PAID TO ALL COUNTRIES, THREE WEEKS' NOTICE IS REQUIRED TO CHANGE SUBSCRIBER'S ADDRESSES, AND WHEN NOTIFYING KINDLY GIVE BOTH OLD AND NEW ADDRESSES; PRINTED BY THE SUN PRINTING COMPANY, PITTSFIELD, MASS. ENTERED AS SECOND CLASS MATTER, JANUARY 1, 1928 AT THE POST OFFICE. AT PITTSFIELD, MASS., UNDER THE ACT OF MARCH 3, 1879.

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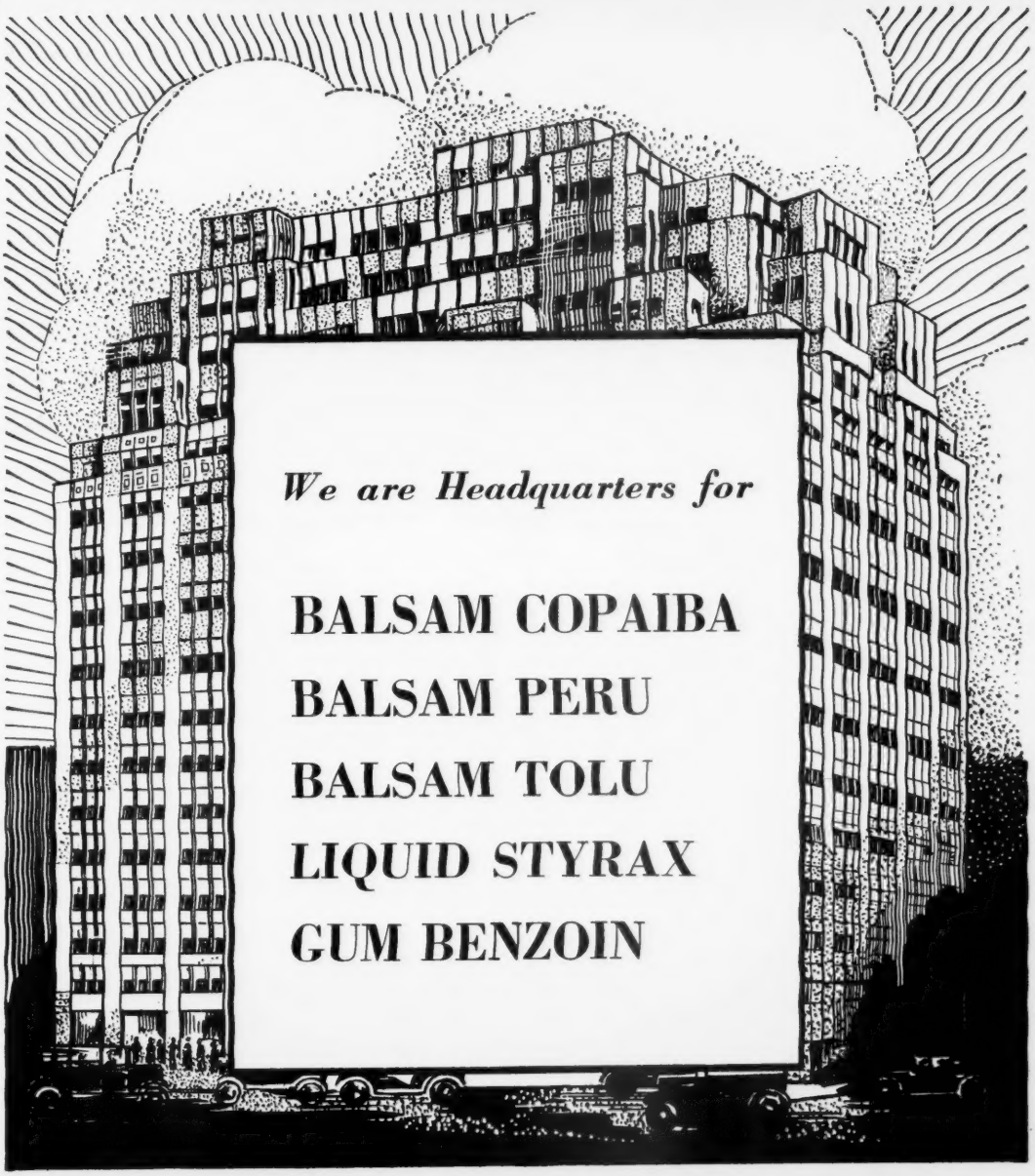
D&O
ESTABLISHED IN 1798

ESSENTIAL OILS
and Kindred Products



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Buyers' Guide

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Stanco Distributors, Inc.
U. S. Industrial Alcohol Co.

AROMATIC CHEMICALS

Dodge & Olcott Company
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Newport Chemical Works, Inc.
Schering Corporation
Ungerer & Co.
van Ameringen-Haebler, Inc.

BEESWAX

Theodor Leonhard Wax Co., Inc.
Will & Baumer Candle Co., Inc.

BIOLOGICAL CHEMICALS

Wilson Laboratories

BORAX

American Potash & Chemical Corp.
Pacific Coast Borax Co.

COD LIVER OIL

P. R. Dreyer Inc.
Chas. L. Huisking & Co.
Norwegian Cod Liver Oil Association

CRUDE DRUGS

Bamberger, Bloch & Landesman, Inc.
S. B. Penick & Company
Soc. An. Erboris

DENTIFRICE BASES

Iliff-Bruff Chemical Co.
Industrial Chemical Sales Co., Inc.
John & E. Sturge, Ltd.

ESSENTIAL OILS

W. J. Bush & Co., Inc.
California Fruit Growers Exchange
Dodge & Olcott Company
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc
Magnus, Mabee & Reynard, Inc.
Newport Chemical Works, Inc.
Plaimar, Ltd.
A. M. Todd Co.
Ungerer & Co.
van Ameringen-Haebler, Inc.

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California Fruit Growers Exchange
Dodge & Olcott Company
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Magnus, Mabee & Reynard, Inc.
Ungerer & Co.
van Ameringen-Haebler, Inc.

GELATINES

Coignet Gelatines

GLYCERIN

Colgate-Palmolive-Peet Co.
Will & Baumer Candle Co., Inc.

MEDICINAL CHEMICALS

Abbott Laboratories
Benzol Products Co.
Dow Chemical Co.
Harshaw Chemical Co.
Heyden Chemical Corp.
Hoffmann-LaRoche, Inc.
Chas. L. Huisking & Co.
E. C. Klipstein & Sons, Co., Inc.
Mallinckrodt Chemical Works
Merck & Co., Inc.
Monsanto Chemical Works
Newport Chemical Works, Inc.
N. Y. Quinine & Chemical Works, Inc.
Chas. Pfizer & Co., Inc.
Schering Corporation
Swann Corporation

MINERAL OIL

M. W. Parsons Imports
Schliemann Companies, Inc.

SOAPS

J. L. Hopkins & Co.
S. B. Penick & Co.
John Powell & Co., Inc.

VANILLIN

Fritzsche Bros., Inc.
Givaudan-Delawanna Inc.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Works

CONTAINERS

ADHESIVES

Nat'l. Adhesives Corp.

BOTTLES

Maryland Glass Corp.
Owens-Illinois Glass Co.
Swindell Bros.

COLLAPSIBLE TUBES

Art Tube Co.
New England Collapsible Tube Co.
Sun Tube Corp.
White Metal Mfg. Co.
A. H. Wirz, Inc.

PACKING MATERIALS

Kimberly-Clark Corp.

VIALS

Kimble Glass Co.

CLOSURES

CORKS

Armstrong Cork Co.

INSIDE THREAD CAPS

Spring Stopper Co.

LINERS

Armstrong Cork Co.
Bond Mfg. Corp.

METAL CAPS

Aluminum Seal Co.
Anchor Cap & Closure Corp.
Crown Cork & Seal Co.
Ferd. Gutmann & Co.
Phoenix Hermetic Co.

PLASTIC CAPS

Armstrong Cork Co.
Bakelite Corp.

MACHINERY & EQUIPMENT

FILLING MACHINES

Alsop Engineering Co.
Arthur Colton Co.
The Karl Kiefer Machine Co.
F. J. Stokes Machine Co.
Stokes & Smith Co.

LABELING EQUIPMENT

Economic Machinery Co.
Liquid Carbonic Corp.

MIXING EQUIPMENT

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Mixing Equipment Co., Inc.
F. J. Stokes Machine Co.

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Package Machinery Co.
Stokes & Smith Co.

PHARMACEUTICAL MACHINERY

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MAGNUS, MABEE & REYNARD, INC.
NEW YORK, U.S.A.

THERE IS A FACTOR which decides the intrinsic worth of an organization, never itemized in expense sheets. This factor is the capacity of correct management which is responsible for differences in laboratories, manufacturing processes, methods and selections of raw materials, as well as a sales policy, resulting in the confidence of many loyal customers.

The MM&R Research Laboratories consider your problems their problems and can help you reach satisfactory conclusions with the use of their services.

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TERPENELESS OILS M.M.&R.
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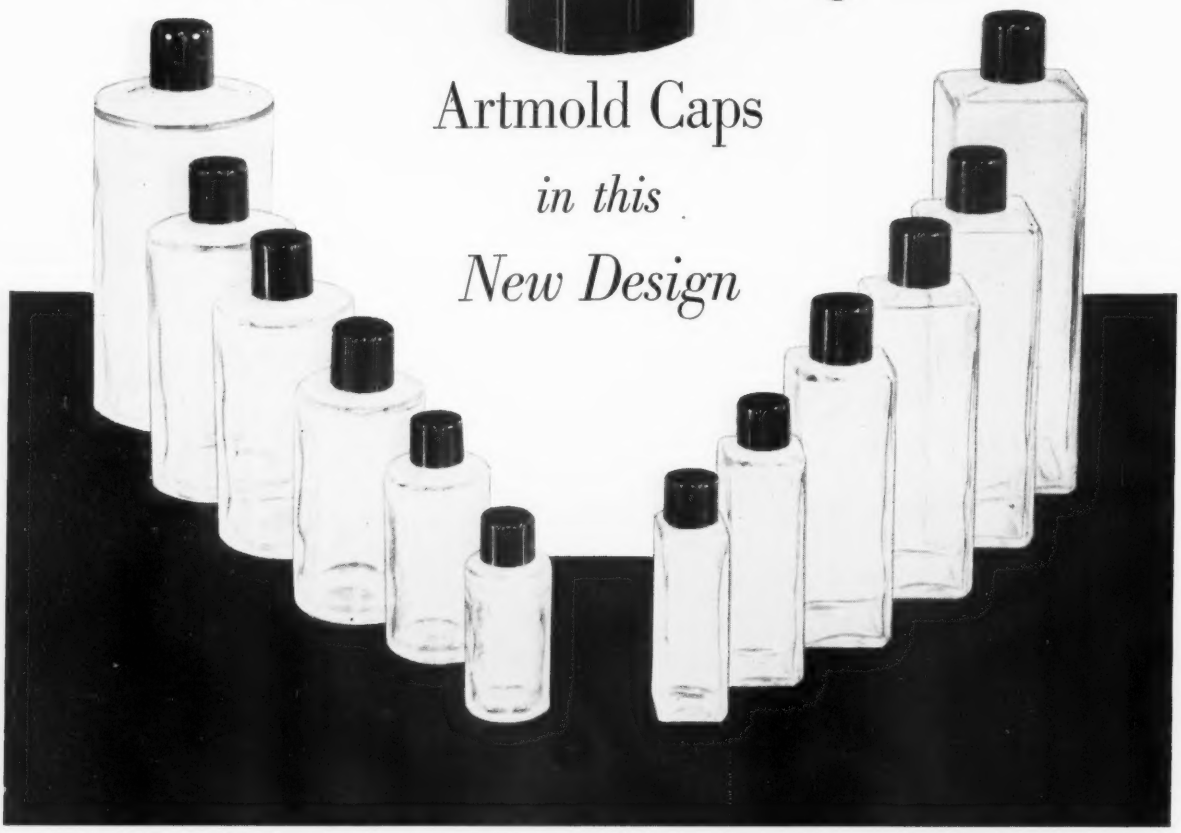
CERTIFIED FOOD COLORS M. M. & R.
Brilliancy, Strength and Economy

PARAGON OLIVE OIL
The ultimate Olive Oil

M M&R MAGNUS

A full line of Long-skirted Artmold Caps *in this New Design*



This attractive line of Carr-Lowrey stock bottles is fitted with the new long-skirt Armstrong's Artmold Caps. Samples and prices on request.

Fills the need for attractive stock-design caps to harmonize with tall, graceful bottles

NOW for the first time you can get long-skirt molded caps of stock design in a complete range of sizes and colors. Armstrong offers this new Artmold Cap in sizes from 13 millimeters to 28 millimeters inclusive. And the same design is also available in the short-skirt type.

Notice the refined simplicity of this cap—the pleasing proportions and classic lines. It was designed with an eye to the sleek grace of tall, stylish bottles. If your package needs new life and beauty, write for samples and see the remarkable change produced by a truly artistic closure.

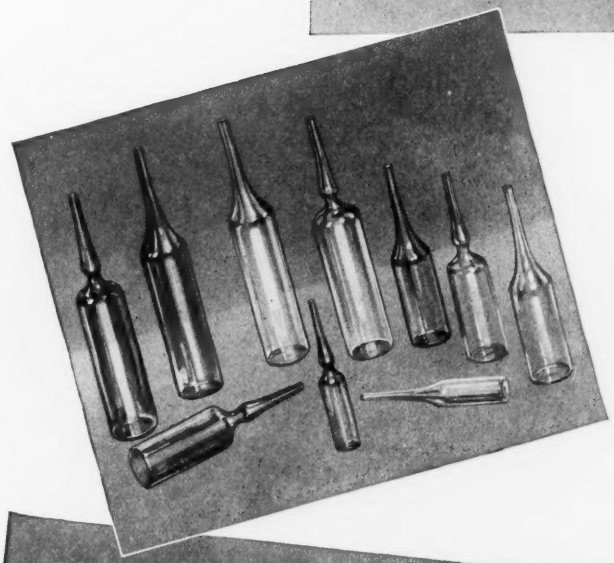
In addition to this new cap, Armstrong offers a variety of other standard, ready-molded designs. Or if you wish, you can have your own special design created in Armstrong's Artmold Caps or Armstrong's Embossed Top Corks.

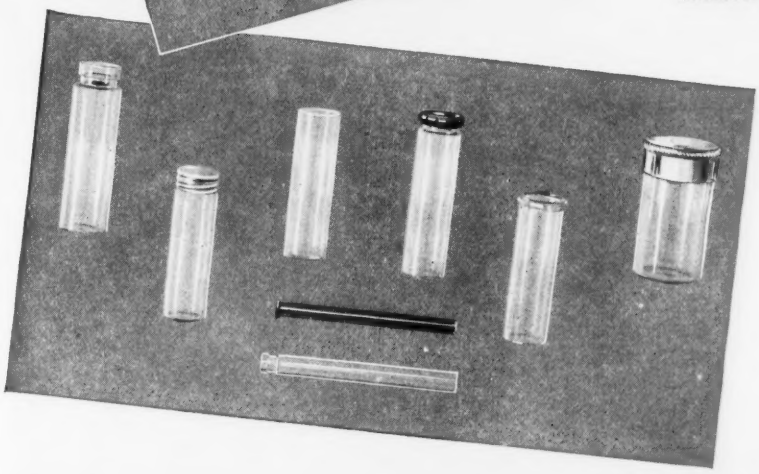
Armstrong's Closure Line includes, also, corks of every description, Du Pont Cellulose Caps, all kinds of daubers and applicators, rubber stoppers, crowns, and discs or liners of various types. There's an Armstrong Closure for every package and every product.

For samples and prices of the new long-skirt caps, or any of the closures listed below, write Armstrong Cork Company, 913 Arch Street, Lancaster, Pennsylvania.

Armstrong's Closures

CORKS OF ALL KINDS . . . ARTMOLD CAPS . . . EMBOSSED TOP CORKS . . . DAUBERS . . . CROWNS . . . DU PONT CELLULOSE CAPS
CELLULOSE BEVERAGE BANDS . . . APPLICATORS OF ALL KINDS . . . RUBBER STOPPERS . . . CAP LINERS . . . BUNGS





ATTRACTIVENESS and purity are vital to profits in drug, pharmaceutical and perfume products. The day of haphazard packaging has passed. These products must "look their best" if they are to lead in sales.

For this reason a great number of outstanding products are packaged in Kimble vials, serum bottles, and ampoules — for Kimble glass is the standard of quality in industrial and scientific glassware.

Full particulars covering Kimble Drug, Pharmaceutical or Perfume Glassware are forwarded promptly on request.

KIMBLE GLASS COMPANY
Principal Office and Plant, Vineland, N.J.

Branch Offices:
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Boston, 131 State St. Chicago, 402 W. Randolph St.
Detroit, General Motors Bldg.

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INDUSTRIAL CREDIT ASSOCIATION

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THE ANCHOR LINE OF CLOSURES INCLUDES:

- Anchor C Caps
- Anchor D Caps
- Amerseal Caps
- 2 pc. Amerseal Caps
- Domed Amerseal Caps
- Paragon Caps
- Band Caps
- A Clipper Caps
- R Clipper Caps
- Continuous Thread Caps
- C. T. Bottle Caps
- 2 pc. C. T. Caps
- Deep Screw Caps
- 2 pc. Deep Screw Caps
- Molded Caps

FOR *Molded Caps*

PARTICULARLY DESIGNED TO BE EFFICIENT SEALS

IN place of hard-to-prove generalities—high quality, care in manufacture and such—let's get right down to hard pan facts about these Anchor Molded Caps.

Why is the Anchor variety a better cap? In what ways is it better, specifically?

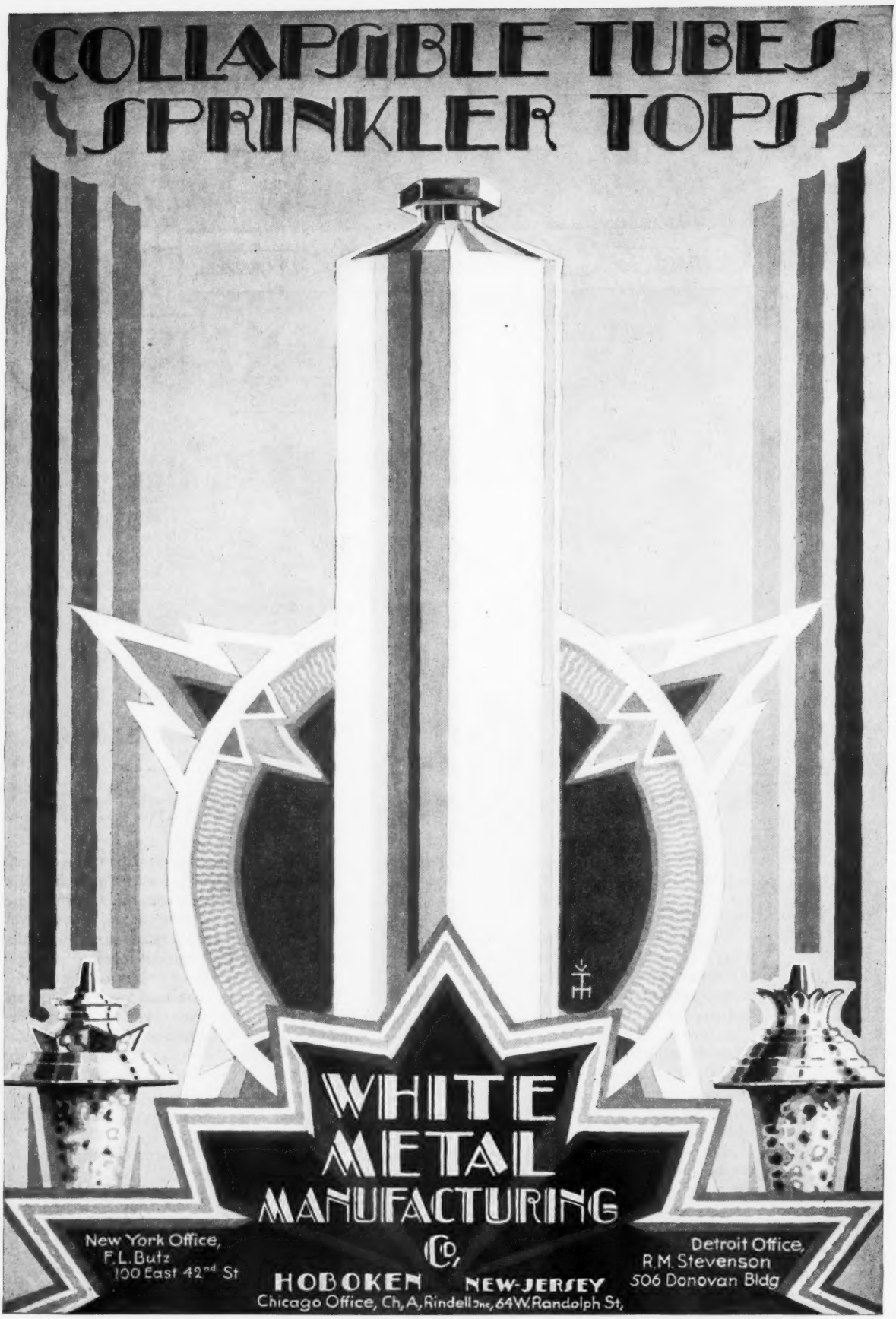
Here is the answer. Because they, and they alone, possess two basic structural improvements, each important enough to warrant your adoption of them, namely, (1) a positive method of holding the correct sized liner in place that also permits the liner to rotate freely; (2) uniquely designed threads that ensure a firm, sure grip around the complete circumference of the container finish.

Many benefits are the natural result; caps can be shipped complete with liners inserted, liners do not fall out in shipment or application, nor stick to the bottle tops when the caps are removed. Neither do they wrinkle or buckle, or become damaged in sealing. Caps will not loosen, possess added strength and seat squarely and firmly. All of which increases their sealing efficiency and your peace of mind.

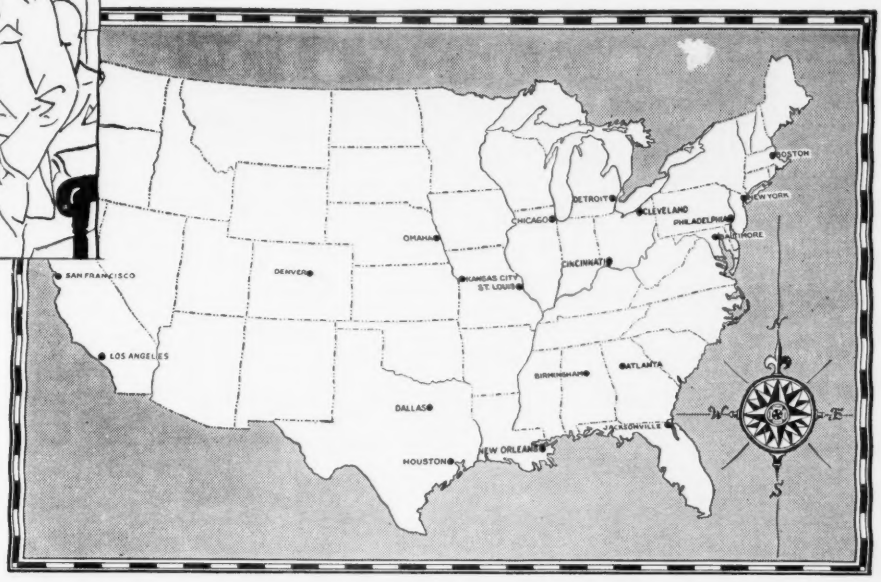
True, there are other points of superiority, but here are two that stand out clearly and distinctly – highly important ones – that no molded cap ever had before, and that a molded cap most decidedly ought to have – that give you definite specific advantages. Wouldn't you like to have the complete facts about these unusual caps? A request will bring a descriptive folder.

Anchor Cap & Closure Corporation
Long Island City, N. Y. Toronto, Canada
Branches in all Principal Cities

Anchor CONSUMER-APPROVED CLOSURES for every Packing Need


COLLAPSIBLE TUBES
SPRINKLER TOPS
WHITE
METAL
MANUFACTURING
Co,
New York Office,
F.L.Butz
100 East 42nd St
Detroit Office,
R.M. Stevenson
506 Donovan Bldg
HOBOKEN NEW-JERSEY
Chicago Office, Ch,A,Rindell Inc, 64W.Randolph St,

When Closures are the Question



Look to

"Sealing Headquarters" for Service

IF your product is packed in glass you can look with confidence to "Sealing Headquarters" to provide you with the right closure. Here is a wealth of practical experience in solving sealing problems, research laboratories that are unsurpassed in their equipment and personnel, a tremendous manufacturing plant (the largest of its kind in the world), a capable art department to create and execute individual designs.

With many types and sizes of closures at our disposal, there is no prejudice or predisposition to influence our recommendations. To aid you in obtaining the *right closure for your product* is our first and only consideration.

There is a C. C. S. office conveniently near you. Whenever the question of closures comes up, phone for the C. C. S. man. That is the quickest and surest way to obtain satisfactory, economical sealing for your product.

Write, wire or phone the office nearest you.

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55 Forsyth St., S. W.

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BIRMINGHAM, ALA.
2305-2307 Morris Ave.

BOSTON, MASS.
143 Sidney St. Cambridge, Mass.

CHICAGO, ILL.
1346-1354 Northbranch St.

CINCINNATI, OHIO
212-214 E. Third St.

CLEVELAND, OHIO
2106 W. Superior Viaduct

DALLAS, TEXAS
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DETROIT, MICH.
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When you bring your carefully compounded product into the keen competition of the retailer's counter—are you putting its best foot forward? Are you satisfied that its *appearance* will tell prospective purchasers the story of care and quality that your manufacturing process deserves?

A new line of specially styled Owens-Illinois stock containers provide exactly the right packaging help for manufacturers who have some doubt about the "eye appeal" of their product. Since these distinctive containers are stock items, they may be had in relatively limited quantities without making the usual cost sacrifice. Owens-Illinois Glass Company, Toledo, Ohio.

OWENS-ILLINOIS
BOTTLES AND GLASS CONTAINERS

COLOR AND DESIGN CAN MAKE A MIGHTY DIFFERENCE!

Many an excellent product falls *down* because it is not attractively put *up*. A new design, emphasized by original use of color, will start the sales curve on the up-and-up . . . And too, the idea that proves a gold mine is often brought to you from the *outside*.

America's leading users of tubes have found our ideas interesting and profitable. A line to us may bring that happy idea to you. Why not send that line right now?

NEW ENGLAND COLLAPSIBLE TUBE COMPANY

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New York Office: 370 Lexington Ave., (Cor. 41st St.)

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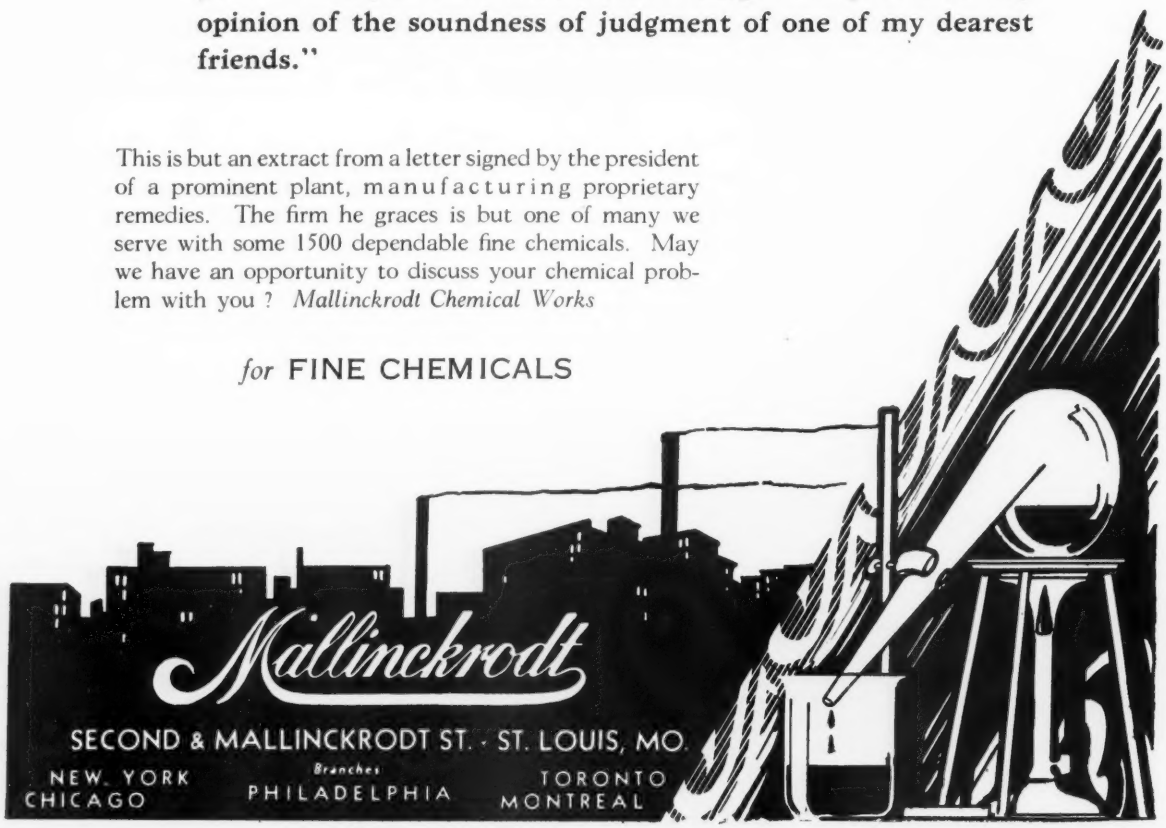
— *for 41 years a satisfied customer*

A customer since 1890—name on request—writes that the advice of a friend of his led to this long business friendship.

"I do not remember the words he used in his recommendation of your house as an outstanding one for reliability and fair dealings, but they were sufficiently impressive, coming from him, to keep me firmly anchored to you all these years. And you have never done a single thing to alter my opinion of the soundness of judgment of one of my dearest friends."

This is but an extract from a letter signed by the president of a prominent plant, manufacturing proprietary remedies. The firm he graces is but one of many we serve with some 1500 dependable fine chemicals. May we have an opportunity to discuss your chemical problem with you? *Mallinckrodt Chemical Works*

for FINE CHEMICALS



Drug Markets

Vol. XXIX SEPTEMBER 1931 No. 3

Walk—Do Not Run

MEN have a way of moving in a little cosmos all their own. Beset by the responsibilities and perplexities of the jobs they have to do, any policy which does not fit snugly into the individual's groove is apt to be dismissed as theoretical or impractical. So we see a two-headed janus in so many companies—the purchasing department aggressive and determined to force prices down to the limit of resistance; the sales department harassed and beset in its effort to maintain sales with at least a slim margin of profit.

NO ONE denies the right of the buyer to a bargain; no one denies the right to buy closely and well. No one denies the right to make sure of purchasing as advantageously as one's competitors. But upon reflection, probably all forward looking buyers and other executives will rightly deny the prerogative of a buyer aggressively to club prices which he knows are not returning a fair profit, if for no other reason than the mistaken notion that he is making himself more valuable to his company by this policy. Why do not those major executives who view with pain and consternation the new demands which their sales departments are facing every day, turn thoughtfully to their purchasing departments. Have they, by tacit consent, encouraged a policy which they themselves at sales conventions would decry as unsound, uneconomic, vicious, and disastrous ?

DEPRESSIONS are uncomfortable occurrences to say the least, but so long as an upset economic condition merely remains in the depression stage, things are not so bad. It is when the depression is resolved into panic that the danger grows real. And are not those who are driving prices below the limit of resistance, undermining the efforts of their own sales forces in much the same manner as those who by firing their help are undermining their own efforts to hold up sales volume ? And are not both of these types acting in exactly the same manner as people who trample over one another in a mad rush to the fire exit when the fire is nowhere near them ?

IN ALL industry, in every department, we need a renewed feeling that fair profit is the legitimate reward of business. We believe that this feeling can be consistent with sound and clever buying. And we further believe that executive support of such a policy is one of the soundest steps business leaders can take for renewed prosperity.

Fighting the Pine Boards The tendency of manufacturers to jump into the price-cutting situation which is causing havoc in Southern California indicates that the situation has reached the point at which it is a serious menace to the business of the nationally known drug manufacturers. Lambert Pharmacal Company is co-operating through a one price policy free of quantity discounts and advertising rebates as well as through an advertising campaign aimed at the life blood of the price-cutter—substitution.

It is to be expected that manufacturers must take some action when a situation gets out of hand in the manner which is current in California. Retailers there are entitled to protection against this unfair competition, and, if the manufacturers do not aid in accomplishing the necessary relief, relief legislation will follow.

While there are many manufacturers who attempt to maintain the retail prices on their goods and who foster the good will of the retailer in this manner as a protection against almost certain attempts at substitution, we do not think that there are many manufacturers who deep down in their hearts want to see price maintenance legislation become effective.

Certainly there should be little doubt in the minds of manufacturers that price maintenance would cost them far more in business volume and profits than they could possibly spend in trying to rectify an economically unsound situation such as now exists in California, and which might readily spread over the country if real efforts are not made to eradicate it.

There is certainly nothing new in carrying a window full of nationally advertised items at prices which indicate a certain loss on each sale. And there is nothing new about attempting to sell the customer something other than that for which he has asked when the customer is lured into the store by means of these low prices. But still the lower prices move and the cheaper that business is done by retail outlets, the more manufacturers, wholesalers, and others become unduly excited. Not that there is no just cause for all of these factors in the drug trade to move to protect their interests, but there is no cause for hysteria when new entries attempt to redress an old scheme and either attempt to establish a business upon the promise that "you can fool the public all the time," or that "you make money by selling an item at a loss so long as enough of them are sold."

Hail to the Chief With the resignation of Drug Control Chief Dr. James J. Durrett, who joins E. R. Squibb & Sons, manufacturers generally will look forward to the new Chief Dr. Frederick J. Cullen with a hope that his will be a more reasonable administration of the drug phase of the Food and Drugs Act. True enough, the Director of Regulatory Work, Walter G. Campbell remains as the guiding head of the entire enforcement division, but there is little doubt but that Dr. Durrett himself inaugurated the drastic policies for which his regime was famous. Mr. Campbell merely backing him up in what, from the department viewpoint, seemed a simple procedure.

But while Dr. Cullen is responsible for the statement that there will be no change in the policies of the Administration, we do not think that the determined opposition which has developed in the drug trade as the result of Dr. Durrett's policies, as well as the many court decisions adverse to these policies, will be without their effect either upon Dr. Durrett's successor or upon Mr. Campbell himself.

We are glad that a change has taken place in the office of Drug Control Chief. We welcome Dr. Cullen to the position of controlling the products of the drug trade. We express the hope that he will be reasonable in the enforcement of the Food and Drugs Act so that the reputable drug manufacturing industry will have little or no cause for complaint.

• • •

Merely an Aid A purchasing agent writes us: "I want to see a copy of Drug Markets Catalog and Directory, because from all I hear of it, a purchasing department will not be necessary for any company that has a copy."

If we thought our good friend was serious and not just taking a dig at us for the enthusiasm displayed by friends of ours who call on him, we would very reluctantly send him a copy. His conception of a purchasing agent whose only assets are a memory for sources of supply and some trade facts, would be equivalent to a salesmanager who fears the competition of a card index system.

We like to think of the Drug Markets Catalog and Directory as a useful instrument which the buyers, chemists, and laboratory production managers of our industry use in much the same manner as an engineer uses a slide rule. It is meant to save much time and wear and tear on the memory. That should be enough for any department.

Small Profit--Large Volume That a cut price will increase the consumption of drugs as well as of other products has been clearly demonstrated in the case of the products Pyridium, Mallophene, and Serenium, competing products for the treatment of infections of the genito-urinary tract. In the case of all these products the retailer's price of $6.00 per bottle of fifty tablets made the cost of treatment high when it is realized that from two to three tablets must be taken three times a day and that the treatment sometimes extends over a period of six weeks. Furthermore, it is a fact that the nice friendly independent drug retailer was in some instances charging on prescriptions as high as $8.00 and $9.00 per bottle of 50 tablets for which he paid $4.50.

Upon investigation it was determined that the potential market for the product was far beyond the consumption. Physicians and druggists complained that the price was too high and that only the wealthy could take advantage of the efficacy of the product. Thereupon, manufacturers cut their prices sharply, in at least one instance the cut being exactly 50 per cent. of former price.

Since the cut in the market occurred July 1, business has increased sharply. By this stroke manufacturers have placed the product within reach of those who are more apt to be suffering from such infections than those people who could afford to pay the higher prices. Druggists are able to recommend the product in more instances, and those who are timid about visiting a physician can obtain an ethical product at a reasonable price.

The case of these products merely serves to illustrate that there is the possibility of a small profit large volume phase applicable to the sales problems of many of our drug products; and amid the many complexities that surround the sales promotion of most drug products, this fact is quite often overlooked.

• • •

Promoting Censorship Prominent tooth pastes are now approved by the American Dental Association so that Colgate's no longer "stands alone." Within the month, Iodent, Pebecco, and Squibb's Dental Cream have announced that they are members of a select group.

We hope that manufacturers do not take too seriously the effect of this acceptance upon the buying public. For if they do they are apt to make the foolish move of giving free to the A. D. A., advertising space that will only serve to build up an unofficial censorship of dental products in which manufacturers will have no voice.

• • •

The Autumn Season Is At Hand But we fear that many of the business people of the country are facing it with fear and hesitation rather than with the aggressiveness and confidence which was so characteristic until the experiences of 1931. It is surprising to see people who always professed an undying faith in themselves and in the business ability of their country, completely lose that faith and believe that it will never stop raining.

True enough, too many prophets of the future have gone wrong in their attempts to definitely ascertain the point at which the present depression will cease and the turn for the better will arrive. But no matter if all the prophets fail in their predictions, such a condition can not deny the fact that the rain will cease to fall at sometime, and that we are two years closer to that time than we were when the thing started in October 1929.

Business can not revive if all the business men of the country fail to stimulate conditions. If all the business men of the country were to assume the attitude that there is no use doing anything now, no change would ever develop and these business men would never do anything. Fortunately for all business men and for the country at large there are those who will fight harder because the going is tough.

• • •

Our Best Advertisement In this issue we have inaugurated a series in which the man responsible for the advertising of a drug or toilet goods house which is a prominent advertiser will tell what piece of copy he regards as the most effective which his company has ever used. We expect the series will evoke quite some interest since undoubtedly the view of the outsider might be somewhat different than that of the man who really knows.

Perhaps there are many who would expect Theodore Weicker, of E. R. Squibb & Sons, to select the advertisement which won the Harvard award, entitled "The Call That Would Awake Any Mother." But Mr. Weicker's view is rather that of the foundation of Squibb's advertising success, rather than a short view of any particular piece of copy which was only one of many built upon the foundation.

Manufacturers whose advertising is not of the institutional character commonly em-

ployed by Squibb might readily select a piece of copy remarkable for direct results. Others will have an entirely different basis of reasoning. All types of companies will be interviewed: Ethical, proprietary, cosmetic, etc.

• • •

Cheaper Cosmetics? Movement of cosmetics during depression naturally slows up to a degree somewhat greater than that of medicinal products. But at the same time the feminine public is no less desirous of using these products—which have become necessities—than they were in more prosperous times. Therefore, the movement of the lower priced products should be accelerated, unless the more desirable products are offered at lower prices. It is only natural to expect that, within very narrow limits, the quantity of cosmetics used today will be equal to that used two years ago. However, it is also natural to expect that the amount of money paid for these products will be materially less.

That styles play an important part in successful cosmetic merchandising is known to everyone even slightly acquainted with the market for these goods. That liquidation of cosmetics passing out of style must be accomplished quickly so that inventories can be kept healthy is also a part of slight knowledge of the market. Today we see this liquidation being accomplished by certain chain stores which are openly offering two dollar compacts *at twenty-nine cents.*

Whether the cosmetic market will lower in value even for the products of the manufacturers of the finer class of goods has not yet been definitely indicated. However, the clothing market which suffered severe liquidation by the retail stores during the closing summer, has definitely moved to lower levels. It is *difficult to see just how this is going to be* accomplished by cosmetic manufacturers without the outward appearance or the quality of the product suffering to a great degree. Perhaps there are those manufacturers who can solve this problem and we would like to know how they do it.

• • •

Ten Years Ago

From Our Pages, September 1921

Experiments with the growing of the chaulmoogra tree at the United States plant introduction garden near Chico, Calif. are being conducted with a view of determining the expediency of producing oil chaulmoogra from American grown trees instead of depending on India for this valuable medicinal product.

• • • New and Non-Official • • •

• • •

If You Have Tears . . . .

The overnight increase in demand for chloracetophenone has prompted one of our friends to remark that, times being what they are, he can't see why anybody should need tear gas to make them cry.

• • •

Get 'Em Younger

Some merchandising genius has devised a deal by which you get a razor with each package of chewing gum or vice versa, and we are frank to confess that we are at a loss as to the correct procedure. Should one chew the gum before, after, or during the shave. Or should the gum be spread on the face before like a cream, or after, like a lotion.

If the idea is to increase the market for the razor, we suggest (without charge) a teething ring be given with each one.

• • •

Snubbed Again

We are one of the two or three persons or corporations who did not receive invitations from the Government to bid for Muscle Shoals. Roughly speaking, a thousand or so were invited, many of whom are long since dead and gone, but our name was not there. We wonder if it could be B. O. or halitosis or something. Not that we wanted the darn thing anyhow, but it would have been only common courtesy to ask us.

• • •

The House That James Built

Now that Doc Durrett is with Squibb he's our pal and we certainly hope that he made them sell or rent his Maryland house for him before he consented to work for them.

• • •

Goodbye Depression

The Prosperity Association of America, Inc., has been incorporated in Wilmington with the stated purpose of proposing and furthering the passage of laws which will perpetuate the permanent prosperity of the United States, and we assume that it's all over but the shouting.

It seemed significant, however, that the new company had no capital stock.

• • •

Oyez! Oyez! A Contest

The best looking calling cards we have seen are carried by representatives of the Stanley Manufacturing Sales Corp. We have been carrying one around with us for months trying to work up courage enough to throw it away, but it's too good looking.

We have decided therefore to invite competition. Anyone who thinks he has a good looking calling card, send it in. To the winner of the contest for the best looking card we will award a prize of—well, we'll give him the Stanley card we've been carrying around.

• • •

Wouldn't It Jar You

A court decision recently allowed the claim of an importer that a round flint glass container with metal cap could be classed as a box. We think this should be carried to the World Court so that the question of "When is a jar not a jar", could be settled once and for all.

• • •

The Old Guard

About 400 of the country's 61,000 drug stores are devoted exclusively to compounding prescriptions. Among them they manage to do 50 per cent of the country's prescription business and probably just can't find time to make a ham and cheese on rye.

"She'll buy anything we label a bargain"
"Give her that - - Nobody else'll take it"
"We can unload this on her"
"No more rubbish to sell her today?"
SAPPY SUSAN
the Price-cutter's Dream Girl
Susan has won the newest championship. She'll grab anything—no matter how unknown and worthless—if it's labeled "bargain." She always goes to the stores whose sales policy is pricing standard articles below wholesale cost.
She's so dumb she thinks a price-cutter is selling standard articles below cost, as a favor to her.
She never notices that he sells her a lot of other things at the same time. They're not advertised goods. She doesn't know what they're worth—and cheerfully pays many times what they cost the price-cutter.
Or maybe he gets her to take a cheap imitation of what she asks for. She pays far too much for it, too. And she has no guarantee of its results.
Of course there are some legitimate drug stores which have to meet the price-cuts, but nevertheless do not use these unfair methods of making up their losses.
Here are a few facts for you, not for Susan. Facts aren't her style.
203 mouthwashes were chemically examined. 94 could not kill germs, 49 others could not do it fast enough to be practical for gargling.
Listerine, in repeated laboratory tests, has killed 200,000,000 germs, even the stubbornest, deadliest kinds, in 15 seconds. Reduced mouth bacteria 98%.
For 49 years it has satisfied doctors and millions of users.
Be safe. Get Listerine. And from a druggist who makes a fair profit, so that he is not tempted to substitute something inferior. Lambert Pharmacal Co., St. Louis, Mo.
TRADE AT A FAIR-PRICE STORE AND GET WHAT YOU ASK FOR

PRICE CUTTER
What lies behind the "cut-price" lure?
You are too intelligent to think that men in business are going to sell things at a loss, as a favor to you. Consequently you will suspect some joker when you see standard articles, advertised at nearly half price in a store that practices that policy.
Those special prices are only lures to get you inside. Then the clerk may try to sell you a cheaper imitation, "just as good," or else he will make up the loss on the "bargain" by selling some unknown article at the same time, far above cost.
To be sure, there are some legitimate druggists which have had to meet these cut-prices—yet do not indulge in these unfair methods of making good their losses.
If, however, you ask for a standard article at a fair-priced druggist's, you get it. He values your good will. No substitutes or imitations. Because he makes a reasonable profit on all his goods.
This is supremely important when you get an antiseptic. Your health is at stake.
203 mouthwashes were chemically tested. 94 had no power to kill germs. 49 others worked so slowly that they would be impractical for gargling.
When you are offered some unknown imitation of Listerine, try to get printed, scientific evidence of its power. You won't be able to.
But here's what repeated laboratory tests have proved about Listerine. It kills 200,000,000 germs, even the stubbornest, most deadly kinds—in 15 seconds. It reduces mouth bacteria 98%.
Back of that scientific evidence is the support of millions who have used it successfully for 49 years.
LISTERINE
buy from a fair-price store and get what you ask for
LAMBERT PHARMACAL CO.
ST. LOUIS . . . . . MISSOURI

Pine Boards Bring Action

While destructive retail price situations throughout the country have long brought action by some manufacturers, the Pine Board Store competition in Southern California is causing many manufacturers to go strongly to the support of the independent retailer.

THAT definite action will be taken by manufacturers to curb extension of predatory price-cutting which is rampant today is indicated by the fact that more manufacturers are entering the fight to protect their own products in a condition which is causing substitution to be the only means of self-defense of an increasing proportion of the drug trade. Particularly in Southern California where the pine board type of store has made its greatest inroads upon the retail drug trade as it has long been established, has this condition arisen.

Manufacturers of prominent specialties seem to fully realize the danger of aggressive substitution that lurks in the shadows of disorganized prices at retail. And the tendency to backshelve or to completely hide these products inside the store has been experienced for many years. Also the tendency of some localized retail publications to print weekly the prices at which the cut-price nationally advertised items are selling in the chain stores, does not bring any increase of selling effort to the manufacturer.

Within recent times the pine board stores have greatly aggravated this condition. Here are stores that are outdoing the chain stores in an effort to attract business via the route of windows filled with prominent articles at losing prices. For the greater part these items are used only as bait to attract the customer into the store so that substitution can be practised. All manufacturers of specialties realize

this fact and most of them feel that such a condition can not help but injure their business in the long run. On the other hand there are those manufacturers who feel that their specialties are so firmly entrenched in the public demand that attempts at substitution can not displace them. They feel that low prices on their items will increase sales, since the cut rate druggist will continue to stock them and will immediately give them upon demand since he knows the customer will refuse anything else. These items, since they are in absolute demand, will attract customers to cut rate stores and allow the druggist to substitute on other items.

However, within the past month, Cleveland became the center of a bitter fight. Here was a chain of stores cutting prices on the products of E. R. Squibb & Sons in much the same manner as the Owl Drug Company cut Squibb prices years ago. Squibb, as in the Owl fight, met fire with fire, allowing the other retailers in the territory to meet the prices quoted by the chain stores on Squibb items and then rebating these stores on their losses. The situation became so bad that Squibb Dental Cream was openly selling at eight cents per tube. Likewise Colgate Tooth Paste marked "Free—Not to be Sold," since it was to be given away free with other Colgate and Palmolive products, was being sold separately at eight cents per tube. Squibb Aspirin Tablets were quoted to the public at 24 cents per bottle of 100 tablets, and other items were priced on much the same basis.

But as usual, Squibb did not let this go on without a struggle. Major Squibb executives rushed to Cleveland determined to drive sense into the heads of those responsible or to cut off supplies to the price-cutters. After a few days in the ground, Squibb executives left with their Dental Cream selling at 22 cents per tube,—a sharp increase from eight cents.

The Lambert Pharmacal Company, manufacturers of Listerine, and Listerine Tooth Paste, have long been the object of price-cutters and substitutors. Listerine has been sold, and still is sold at all sort of prices, and substitution is widely practised on the item. All sorts of trick names as well as the name of an official preparation are applied to products which are offered as the same thing as Listerine. Naturally these items are priced lower than the cut price at which Listerine is offered no matter how low that price may be in any particular instance. How large a share of the market for products of its type Listerine enjoys is most difficult to ascertain, but, however, it is a certainty that Listerine is not enjoying the same portion of the market as it would enjoy if the retailers were not dissatisfied to some extent with the cut prices of the item and did not practise substitution to the extent that they do practise it.

With particular reference to the Southern California condition, the action of the Lambert Pharmacal Company is interesting. Here is a company whose Listerine in particular has long been a loss leader in many

What are the Price-Cutters saying?
BARGAINS BELOW COST
"Hello, Sucker! Come on in!"
Some people are dumb enough to think a price-cutter is running a charity institution. That he keeps in business by selling standard articles at nearly ½ price, that is, at a loss to himself.
If he started his business on this sales policy, he is bound to have some underhand method of covering losses.
Customers who take him at his face value are an easy prey for the traps hidden behind attractive "bargains." How quickly they fall for the offer of something "just as good"—and cheaper.
Once they come in, the store may sell them Listerine at a loss, and make it up by the sale of some other article at the same time, with exhorbitant profit. Or else, some cheap, inferior mouthwash is substituted for Listerine. Either way the customer loses.
You must remember, however, that some legitimate druggists, while they have to meet the cut-prices, still do not practice unfair methods of covering their losses.
Wise customers go to stores where the proprietor makes a reasonable profit on standard articles. He has no temptation to substitute, and gives you what you want.
This is especially important when you are buying an antiseptic. Recently, 203 mouthwashes were chemically examined. 94 had no power at all to kill germs. 49 others worked so slowly that they would be impractical for gargling.
Listerine, on the contrary, has been proved by repeated laboratory tests to kill 200,000,000 germs in 15 seconds. Even the deadliest, most resistant kinds. Mouth bacteria reduced 98%.
Back of it, too, is the guarantee of use by millions for 40 years. Prescription by thousands of doctors all over the world.
Don't gamble with germs, diseases, and maybe death. Get Listerine, and you know your health is guarded.
★
Why not trade at a fair-price store and get what you ask for?
★
LAMBERT PHARMACAL CO.
ST. LOUIS . . . . . MISSOURI

stores. Repeatedly have retail drug journals listed this product among others upon which prices were consistently cut to a level at which competition by an independent retailer meant almost certain loss on each sale. However, Lambert is very active in California at the present time to defeat the price cutter both through personal action and through an advertising campaign such as is illustrated. Lambert has evidently reached the conclusion that actions speak louder than words, although they are also attempting to bring the retail druggists to the understanding that Lambert has a one price to all policy and there are no secret rebates or co-operative arrangements.

As an answer to present conditions, Lambert is taking a striking step in its advertising copy. Always strikingly original for its type of copy since it first developed the halitosis idea, Lambert is now to break forth in a series which strongly advises buyers to stay away from the price-cutting stores as a means of self-protection. In one blow, Lambert will strike hard at the practise of price-cutting in general to the benefit of the independent retail druggist, and at substitution in general whether practised by an independent retailer or by a chain or pine board store.

Copy as attractive as the halitosis or the tooth paste—buy—with what you save—will be used to talk of "Sappy Susan—the Price-Cutter's Dream Girl," and "Hello, Sucker Come On In." The particularly daring and striking copy all leads up to the statements regarding Listerine's germ-killing power

and admonishes the reader to buy at a fair price store and get what he asks for.

Lambert has notified the retail druggists of the West Coast regarding its present effort to protect their interests and also regarding their sales terms. The method which the company employs is that of a $50.00 minimum purchase which affords every buyer the maximum discount which the company allows. There are no inside prices, no co-operative arrangements, no quantity discounts, no freight allowances on carload orders, Lambert states. The buyer under the $50.00 minimum plan buys at the best and only price which the company has to offer. The $50.00 plan means that the buyer purchases about $43.00 worth of goods net, the average net prices being about 10 per cent. off the list. An assortment of sizes is allowed under the plan.

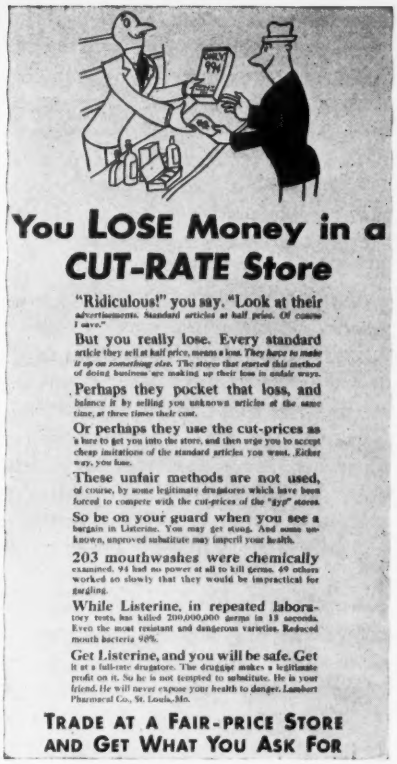
Similarly as with Squibb, Lambert officials were on the ground and met with the officials of the Southern California Retail Druggists Association. Lambert is stated to have received suggestions from the retailers' officials, which suggestions are being carried out to demonstrate that Lambert is with the retailers in the fight. The Association sent a letter to its members regarding the situation which contained the following statements:

"This Association has been active in impressing manufacturers with the real seriousness of this Southern California situation which is spreading like wild fire throughout the nation. The cut rate racketeers in Southern California have brought about a damnable disgraceful condition. Many manufacturers agree that "it is certainly too bad," but claim there is nothing they can do. With the manufacturers who are going to continue that attitude, we are not going to be very much concerned in the future.

"To manufacturers who can prove their sincerity by getting into this fight and doing their level best to help restore sanity in merchandising, we will give our fullest co-operation. Our constant pounding away on this subject has brought representatives from large manufacturers to converse with us regarding the cut rate problem.

"Five weeks ago, two officials of the Lambert Pharmacal Company came here to discuss the matter with us. They informed us of their one price policy; that their $50.00 quantity is their best price, and that they give no advertising rebates or quantity discounts to any one.

"They have made this statement in the public press and in letters over their signature which would be a dangerous statement if it were not true. We told them that although a one price policy is a step in the right direction, there is still much to be done. They took our suggestions back to New York and have returned prepared to go into the fight in a big way. Lambert is planning a campaign of immediate action against cut rate pirates."


You LOSE Money in a CUT-RATE Store
"Ridiculous!" you say. "Look at their advertisements. Standard articles at half price. Of course I save."
But you really lose. Every standard article they sell at half price, means a loss. They have to make it up on something else. The stores that started this method of doing business are making up their loss in unfair ways.
Perhaps they pocket that loss, and balance it by selling you unknown articles at the same time, at three times their cost.
Or perhaps they use the cut-prices as a lure to get you into the store, and then urge you to accept cheap imitations of the standard articles you want. Either way, you lose.
These unfair methods are not used, of course, by some legitimate druggstores which have been forced to compete with the cut-prices of the "gyp" stores.
So be on your guard when you see a bargain in Listerine. You may get stung. And some unknown, unproved substitute may imperil your health.
203 mouthwashes were chemically examined. 94 had no power at all to kill germs. 49 others worked so slowly that they would be impractical for gargling.
While Listerine, in repeated laboratory tests, has killed 200,000,000 germs in 15 seconds. Even the most resistant and dangerous varieties. Reduced mouth bacteria 98%.
Get Listerine, and you will be safe. Get it at a full-rate druggstore. The druggist makes a legitimate profit on it. So he is not tempted to substitute. He is your friend. He will never expose your health to danger. Lambert Pharmacal Co., St. Louis, Mo.
TRADE AT A FAIR-PRICE STORE AND GET WHAT YOU ASK FOR

It's APRIL FOOL the Year Round in a CUT-RATE Store
You know that nobody can keep in business by selling you standard articles below cost. But some store-owners started out with the policy of such prices. Those men are going to try to get large profits out of you in some way, to cover losses on standard articles.
Some legitimate drugstores have had to compete with these cut-prices, yet do not use unfair means of covering their losses. But the ones who began this game usually have less conscience.
Very likely they sell you a lot of unknown goods at the same time. You have no idea what they're worth. So they can overcharge you as much as they want.
Or else they attract you by marked-down standard goods. Then get you to accept unknown imitations of products you know. These substitutes are worth so little that they can sell them for less than the cut-rate standard goods, and still make plenty of profit.
Whichever they do, you stand to lose. And if it's an antiseptic you're buying, to protect yourself against germs, you stand to lose far more than money.
Hundreds of mouthwashes imitate the color, smell, and taste of Listerine. They sell at a much lower price. For a very good reason.
203 mouthwashes were chemically examined. 94 had no effect on germs. 49 others worked too slowly to be practical for gargling.
But Listerine, in repeated laboratory tests, has killed 200,000,000 germs in 15 seconds. Even the stubbornest, deadliest kinds. Reduced mouth bacteria 98%.
Millions have used it—doctors all over the world have prescribed it—for 49 years.
This is the antiseptic you know you can rely on. Get it from a neighborhood druggist, who makes a reasonable profit and is not tempted to substitute. He is your friend, and would not endanger your health. Lambert Pharmacal Co., St. Louis, Mo.
TRADE AT A FAIR-PRICE STORE AND GET WHAT YOU ASK FOR

Executives of many other companies are reported to have been in California studying the situation and attempting to find some means by which they can come to the aid of that part of the retail drug trade in Southern California which is conducting its business on a sound basis. There seems to be quite an unanimity of thought among leading drug executives that the type of competition existing in California is not healthy for anyone concerned with the drug trade and that some definite action must be taken to curb it before it spreads to additional territories and probably to most of the main retailing centers of the country.

And many manufacturers are anxious to demonstrate their sincerity in the matter in much the same manner as Squibb and Lambert have demonstrated theirs. They feel that such action will save their own products from the increasing trend to substitution at the same time as it will make real friends and boosters of the independent retailers who have the past been only luke warm or even slightly antagonistic to their products.

It is pointed out that manufacturers can not and have not, for the most part, maintained that predatory price cutting is sound business. Price cutting within limits is stated as not objectionable, but there must be no passive permission given by manufacturers to the plan of using their products as bait for extensive substitution of products which do not bear their share of the burden.

Lambert has quite conclusively demonstrated that even the dull subject of substitution can be transformed into interesting and effective copy that not only aids the retailer, but also leads up to the logical point of a real sales talk on their own product. While they talk of the danger of substitution existing in these stores on products of other manufacturers, they also talk of the danger of substitution on Listerine and then gives the reasons why the buyer should insist on Listerine when he asks for it.

In the opinion of some manufacturers it would not be surprising to see the trend on the part of manufacturers to take action against the destructive retail drug merchandisers now causing chaos in the retail drug field extend much further. That the manufacturers have as much at stake as the retailers is freely admitted in many quarters even by some of the manufacturers who have formerly displayed little interest in the subject. It is stated by one manufacturer that the spending of money in a manner similar to Squibb and Lambert accomplishes more than would be accomplished were the same amount of money merely spent on straight advertising of the products merits. Here there is a real attempt made to aid those who need aid, and who through this aid become real enthusiasts for the goods of the manufacturers who aid them.

Another manufacturer who is firmly opposed to price maintenance legislation indicates that if the manufacturers do not take action themselves and bear

(Continued on page 311)

Cum Laude

THIS is a continuation of the series of letters begun in our last issue which set forth the reactions of leaders in the drug trade to the appearance of Drug Markets Catalog and Directory. Others who have been kind enough to write in expressing their opinion of this 1931 edition are:

H. B. Price, *Director of Purchases, Sharp & Dohme*

It is a most complete and interesting book and I know will prove a very useful addition to our reference file, as it contains valuable information attractively arranged.

R. L. Cole
Cole Brothers

This book is something that the trade has long needed and it is a wonder.

C. M. Bundy
The C. M. Bundy Company

It is one of the best books of its kind I have seen for many a day.

A. G. DuMez, *Dean, University of Maryland School of Pharmacy*

I have reviewed the first edition of Drug Markets Catalog and Directory and find it to be a most interesting publication. The data and information which it contains appears to me to be so well selected that I am sure the book will be a most useful addition to the library of every pharmaceutical manufacturer or persons engaged in other branches of the drug business.

W. Phillips, *Perfumer*
Lever Brothers Company

The compilation of this directory represents an immense amount of painstaking effort for which the pharmaceutical, chemical, cosmetic and allied industries should be duly grateful.

A. W. Beshgetoor, *Chief Analytical Chemist, The Dow Chemical Company*

You are to be complimented upon the fine appearance of this book. I am sure we will find it of considerable value in our work here.

C. H. Chester
Hance Brothers & White

We feel sure this book will be of considerable assistance to us from many angles.

N. F. Peterson
Hoffmann-La Roche, Inc.

Your catalog is very well gotten up and contains a mass of information which is bound to prove helpful from a reference standpoint during the months to come.

Paul G. I. Lauffer
Pinaud, Inc.

The book is very well gotten up and cannot fail to be of considerable use. It will be a valuable reference on specifications for raw materials as well as their sources of supply.

W. R. M. Wharton, *Chief, Eastern Division, Food and Drug Administration*

We have found this publication to have an every day use in this office.

William Schell
The Tilden Company

You can rest assured that it will be used considerably during the next year or so.

Has Drug Wholesaling Advanced?

Three years after the first attempt at mass drug trade wholesaling the position of the jobber is still uncertain and still a matter of controversy. Will mass distribution eventually solve the problem?

IT SEEMS as though the status of the wholesaler will ever be subject to challenge, but it also seems that he will always exist in some form or another. Three years ago mass wholesale distribution was undertaken by McKesson & Robbins, following which the operations of the Druggists Supply Corporation were extended to form a voluntary co-operative unit of independent service wholesalers which would match McKesson & Robbins in its ability to purchase and distribute merchandise in an effective and economical manner. Since these two groups of wholesalers started their operations, much water has flowed over the dam. Today arguments are almost as common as they were three years ago as to whether mass wholesaling of goods is the means by which the wholesaler will maintain his place in the distributive machinery of the drug trade. There are still many who believe that this method is not the one to advance wholesalers very far.

The difficulty seems to arise from the activities that the larger wholesaling units are wont to engage in, which activities bring these wholesalers more sharply into competition with the manufacturers who pay the wholesalers the discounts upon which they should survive. Note that we say "should" survive—the fact of the matter is that the wholesalers have not yet ceased to compete with each other in the manner of giving away these discounts. Naturally if they give away these discounts, they must gain their profits from other operations such as manufacturing or repacking; or on the other hand, if they are to induce retailers to purchase their manufactured or repacked items they must gather him into the fold by giving him extra discounts on the standard items.

But further than this, some instances of new connections on important standard raw materials have been engaged in by large distributive houses bringing the sharp price competition and loss of business not only to the manufacturers of branded proprietary articles, but also to the large raw material suppliers. This competition has come not only through the inability of the large suppliers to furnish the large wholesale groups with the material for sub-dividing, but it has also come through the ability of a wholesaler to enter into direct competition with the large suppliers in selling the entire trade, manufacturing, wholesaling, and retailing. Naturally there have been instances of high sales resistance on the part of manufacturers who do not care to purchase from the wholesalers who have gone into direct competition with them, but there are many who are willing to shade a price or two until the general market moves down.

Competition of at least one wholesale group in the raw material market and in the sub-division market is said to have reached a point at which it is more than likely that a large manufacturer of bulk raw materials and packer and seller of sub-divisions will for the first time go direct to the retailer with a long discount. Thus the position of the wholesaler in the market for small packages of standard chemicals is likely to be seriously challenged. At least the large manufacturers are apparently reaching a point at which they have decided that they must sell their own goods if they are to hold up their sales volumes.

But likewise are these wholesalers engaging in the price-cutting tactics of free goods and combinations offers for which they so strongly condemn the manufacturers. We have the instance of the offer of a razor with McKesson's shaving cream, which was met by the Druggists' Supply Corporation offering a razor free with Coty's Shaving Cream. Thus the wholesalers themselves, who are supposed to be interested in price maintenance, have taken on the complete aspect of manufacturers, or of cut rate merchandisers.

(Continued on page 311)

Our Most Effective Advertisement

An Interview with Theodore Weicker

"THE 'Priceless Ingredient' message was the most effective piece of advertising copy ever used by E. R. Squibb & Sons."

This was the response to a question from a representative of Drug Markets given by Mr. Weicker, Executive Vice-President of the Squibb Company, who personally has supervised and directed the Squibb advertising ever since that company upset tradition and carried its message of service direct to the public. Seated at an imposing Tudor desk on the twenty-fifth floor of 745 Fifth Avenue in surroundings singularly easeful and reassuring, Mr. Weicker, as erect at seventy-one as he was at twenty-one, amplified his unhesitating reply.

"It was ten years ago," he said, "that this particular advertisement was prepared and published. No other drug manufacturing house had ever advertised; it was not regarded as ethical. But I held that the people should know about the drugs and the household remedies which they bought.

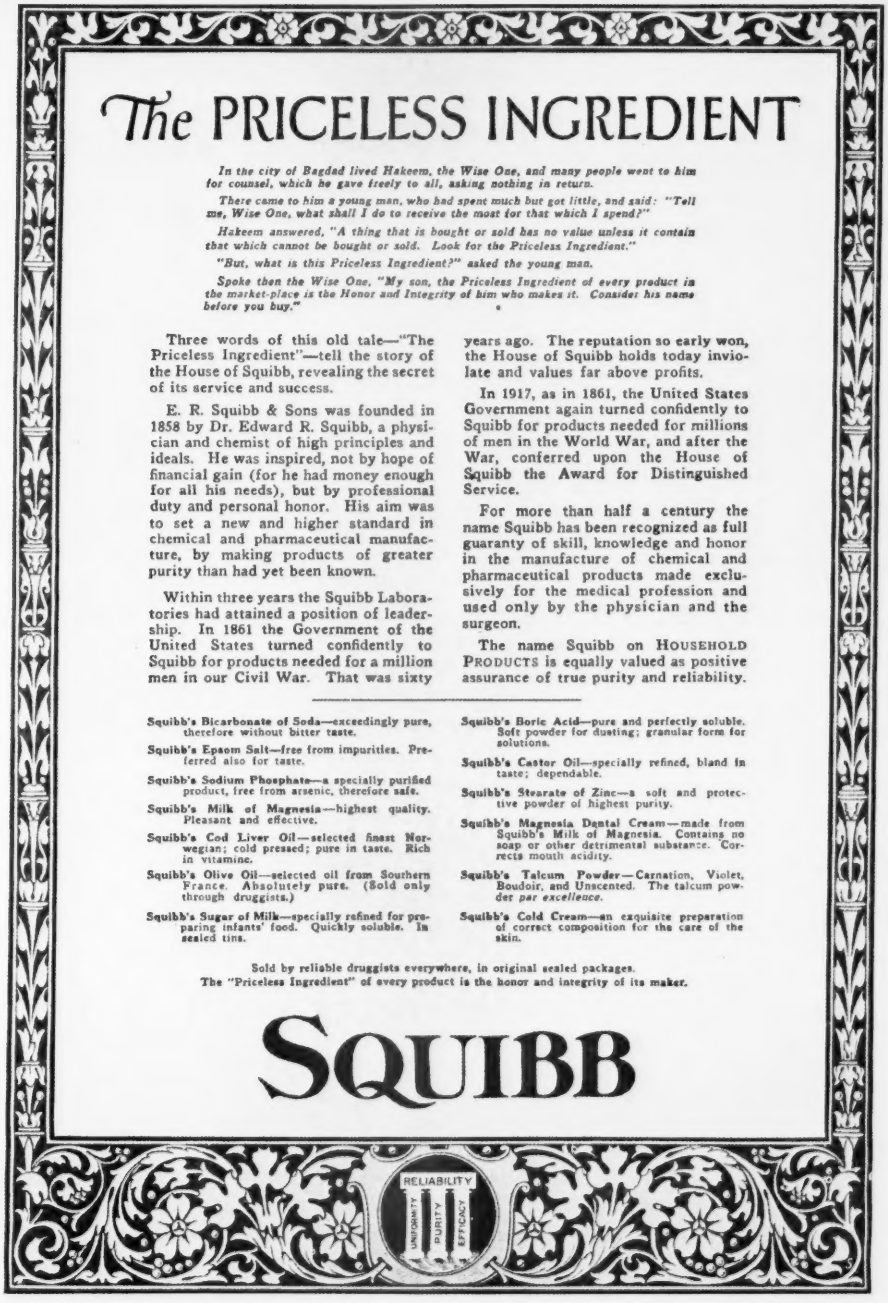
"The name of Dr. Edward R. Squibb had become synonymous with honor and integrity in the manufacture of drugs; the United States government had so recognized him, so also had the medical and pharmaceutical professions. It was natural, therefore, that we should seek to preserve that name and to widen the scope of its influence.

"In all products, certainly in drugs, the honor and integrity of the maker should be known to the purchaser. Consequently, the legend of Hakeem, the wise man of Bagdad, was told. Hakeem said: 'The Priceless Ingredient of every product in the market place is the Honor and Integrity of him who makes it.'

"The reason for the effectiveness of that advertisement ? It is fundamental. Everything which Doctor Squibb had ever made was good; there was none who could dispute that. We publicized an incontrovertible fact and the message was sincere. It drove home a convincing thought; it carried assurance that every product which bore the name of 'Squibb' had among its ingredients the established and recognized honor and integrity of the maker.

"Then you might keep in mind the simplicity of the message. It was a direct statement that our products might be accepted in good faith because they were honestly made. Our advertisement encouraged faith on the part of the people, and that was all we sought.

"Every piece of our advertising copy in the succeeding years has been strengthened by the 'Priceless Ingredient' message. It has served as a confidence-inspiring background. And, if I may change the figure a bit, it is the keystone of the arch of our advertising structure and results show that we have builded well."


The PRICELESS INGREDIENT
In the city of Bagdad lived Hakeem, the Wise One, and many people went to him for counsel, which he gave freely to all, asking nothing in return.
There came to him a young man, who had spent much but got little, and said: "Tell me, Wise One, what shall I do to receive the most for that which I spend?"
Hakeem answered, "A thing that is bought or sold has no value unless it contain that which cannot be bought or sold. Look for the Priceless Ingredient."
"But, what is this Priceless Ingredient?" asked the young man.
Spoke then the Wise One, "My son, the Priceless Ingredient of every product in the market-place is the Honor and Integrity of him who makes it. Consider his name before you buy."
Three words of this old tale—"The Priceless Ingredient"—tell the story of the House of Squibb, revealing the secret of its service and success.
E. R. Squibb & Sons was founded in 1858 by Dr. Edward R. Squibb, a physician and chemist of high principles and ideals. He was inspired, not by hope of financial gain (for he had money enough for all his needs), but by professional duty and personal honor. His aim was to set a new and higher standard in chemical and pharmaceutical manufacture, by making products of greater purity than had yet been known.
Within three years the Squibb Laboratories had attained a position of leadership. In 1861 the Government of the United States turned confidently to Squibb for products needed for a million men in our Civil War. That was sixty years ago. The reputation so early won, the House of Squibb holds today inviolate and values far above profits.
In 1917, as in 1861, the United States Government again turned confidently to Squibb for products needed for millions of men in the World War, and after the War, conferred upon the House of Squibb the Award for Distinguished Service.
For more than half a century the name Squibb has been recognized as full guaranty of skill, knowledge and honor in the manufacture of chemical and pharmaceutical products made exclusively for the medical profession and used only by the physician and the surgeon.
The name Squibb on HOUSEHOLD PRODUCTS is equally valued as positive assurance of true purity and reliability.
Squibb's Bicarbonate of Soda—exceedingly pure, therefore without bitter taste.
Squibb's Epsom Salt—free from impurities. Preferred also for taste.
Squibb's Sodium Phosphate—a specially purified product, free from arsenic, therefore safe.
Squibb's Milk of Magnesia—highest quality. Pleasant and effective.
Squibb's Cod Liver Oil—selected finest Norwegian; cold pressed; pure in taste. Rich in vitamine.
Squibb's Olive Oil—selected oil from Southern France. Absolutely pure. (Sold only through druggists.)
Squibb's Sugar of Milk—specially refined for preparing infants' food. Quickly soluble. In sealed tins.
Squibb's Boric Acid—pure and perfectly soluble. Soft powder for dusting; granular form for solutions.
Squibb's Castor Oil—specially refined, bland in taste; dependable.
Squibb's Stearate of Zinc—a soft and protective powder of highest purity.
Squibb's Magnesia Dental Cream—made from Squibb's Milk of Magnesia. Contains no soap or other detrimental substance. Corrects mouth acidity.
Squibb's Talcum Powder—Carnation, Violet, Boudoir, and Unscented. The talcum powder par excellence.
Squibb's Cold Cream—an exquisite preparation of correct composition for the care of the skin.
Sold by reliable druggists everywhere, in original sealed packages.
The "Priceless Ingredient" of every product is the honor and integrity of its maker.
SQUIBB
RELIABILITY
UNIFORMITY
PURITY
EFFICACY

Prepared and published ten years ago, this advertisement still stands out in the mind of Mr. Weicker as the best Squibb has used

Mr. Weicker's choice of the most effective advertisement copy which Squibb has used during its advertising history, is the first of a series which will include all manner of houses advertising drug trade products. Included in the series will be ethical, proprietary and toilet goods advertising.

Labeling Anti-Fat Medicinals

Dr. Cullen, the new Chief of Drug Control, continues the series of interviews in which Drug Markets attempts to convey the mind of the Department regarding label statements.

HOW can anti-fat preparations be labeled properly so as to comply with the law? This question has been of interest in trade circles, especially in view of the Federal Trade Commission's attack on Marmola, and more recently in view of the opposition of the Food and Drug Administration to labeled claims on certain anti-fat preparations.

The question of a proper label for an anti-fat was put up to Dr. Frederick J. Cullen, new Chief of Drug Control. His reply was that so-called anti-fat preparations should be labeled merely for what they are, in fact.

Dr. Cullen explained that probably most preparations of this type consist principally either of thyroid extract, or of laxative ingredients. It is his view that thyroid extract should be labeled as "thyroid extract," and that any laxative should be labeled as such. There are legitimate thyroid extract preparations put on the market by drug manufacturers and these have been properly labeled as pills or tablets, insofar as they have come to the attention of Dr. Cullen. There are, of course, many laxatives offered and labeled as such.

The trouble comes, in the opinion of Food and Drug Administration officials, when a thyroid preparation or a laxative, or a combination of the two, makes its appearance as an anti-fat remedy. This is nothing more nor less than a masquerade, officials intimate.

In drug trade circles the question has been raised, merely as a topic for discussion, whether an anti-fat remedy is a drug at all, within the meaning of the food and drugs law. This question hinges in part upon the definition of the word "drug." The law defines a drug as something used for the prevention, mitigation or cure of disease. The next point then is, whether fat is a disease. Some cases of excessive fat are due to thyroid or other gland conditions in the body of the obese person. Many cases are due to lack of exercise and/or overeating.

Dr. Cullen was asked about these questions. "A great many cases of overweight are probably due to internal gland disturbances—disturbance of the secretions of the thyroid and other glands," he replied. "Many other cases of overweight are due to too much food and too little exercise.

"What layman is capable of determining whether a particular case of overweight is due to gland disturbance or to other causes? How is the man in the street to decide whether his fat is a disease or is not? What will enable him to determine, on entering a drug store, whether he should buy an alleged anti-fat preparation made from thyroid, or whether a laxative anti-fat would be better for him? The answer is, of course, obvious.

"If he is fat from lack of exercise and from overeating, what he needs is regulation of exercise and diet. Thyroid extract should not be administered except under the direction of a physician. Its use by a person who does not need it is going to cause trouble."

Dr. Cullen stated that the Food and Drug Administration has been cooperating with the Federal Trade Commission in the latter, a dealing with anti-fat remedies. The attitude of the Commission in the Marmola case is approved by the Department, he said. The Commission's position in that case is that thyroid extract is not a safe thing to use for obesity, except upon the advice of a physician.

"Continued use of laxative such as are contained in many so-called fat reducers," said Dr. Cullen, "is going to be, after a period of time, detrimental to the health of the user."

The Chief of Drug Control was asked about epsom salts specifically, since that drug has been claimed to have anti-fat qualities.

"Saline laxatives tend to reduce the water content of the body," he replied. "They might tend to reduce

weight, perhaps, but would have to be taken for a long time to produce that result. But that might produce disease instead of curing it. External use of epsom salts for anti-fat purposes is useless, we believe. If epsom salt is used in hot baths, the hot baths might tend to reduce weight by perspiration. But so would any hot baths.

"Manufacturers of certain epsom salt preparations in the anti-fat category, so-called, have a theory that the salts have the effect of destroying fat in the subcutaneous tissue. However, we can find no authority for that claim."

If excessive fat is due to gland disturbances, Dr. Cullen says, a so-called anti-fat preparation of the laxative type would do no good. If, on the other hand, the fat is due to over-eating, the laxative preparation "would do no particular good," he said, "but might do damage."

Danger from Products

Dr. Cullen says the Department knows of instances where death has resulted from excessive use of thyroid preparations for anti-fat purposes. Federal Trade Commission experts have made similar assertions. Some alleged anti-fat preparations have come to the Department's attention, Dr. Cullen says, which contain poke root or phytolacca, described as a poisonous drug.

Certain preparations have been claimed to reduce weight by eliminating food without digestion. These are considered by Department experts to be dangerous —if true. Others consist chiefly of soap. To be used locally for massage purposes. Still another class of alleged anti-fats is represented by certain chemicals to be used in the bath. These form a curd or scum in the water, which the bather is informed is surplus fat removed from his person. These classes of alleged anti-fats are considered deceptive.

Summing up, Dr. Cullen was asked if it is proper to label any alleged anti-fat preparation as such, or to make the therapeutic claim for it, that it would cure obesity, or similar claims. He replied:

"In some individual cases a patient might possibly be properly affected by using a so-called anti-fat preparation. However, there are so many kinds of these preparations There are also various types of excess weight, due to various causes, respectively.

"We do not figure that there is any so-called anti-fat remedy on the market that can be recommended for the cure of obesity, by reason of the various causes of excessive fat. Under the circumstances, no such preparation would be a competent treatment or cure for all the different conditions represented in cases of overweight.

"Therefore, under the general rules of the Administration and the policies of the Department, it is not permissible to make label claims of anti-fat curative value on so-called obesity cures and anti-fat preparations."

Dr. Cullen did not recall a great many cases involving the seizure of alleged anti-fat remedies. He has not been in his present position of responsibility so very long. However, at the Department of Agriculture, it is stated that many preparations "falsely labeled for cure of disease and reduction of fat" have been removed from the market, This result has been accomplished by reason of the Food and Drug Administrations' authority over interstate and foreign commerce in drugs. Destruction of so-called anti-fats, and fines for some manufacturers, have followed seizure of their products and libel proceedings in federal courts.

However, perhaps the bulk of results of the Food and Drug Administration opposition to anti-fats has been obtained in changes made by manufacturers in their label claims. Dr. Cullen says that many labels on so-called anti-fat preparations have been corrected, in accordance with the principles enunciated by the Department, as a result of correspondence had by the latter with the trade.

But much of the difficulty experienced by government regulatory officials with anti-fat preparations, relates not to their label claims. It relates to general advertising of anti-fats, over which the Agricultural Department has no control. The Federal Trade Commission has attempted to cope with that situation, in the Marmola case. To date, however, it has been unsuccessful in the United States Supreme Court.

Disagreement of Experts

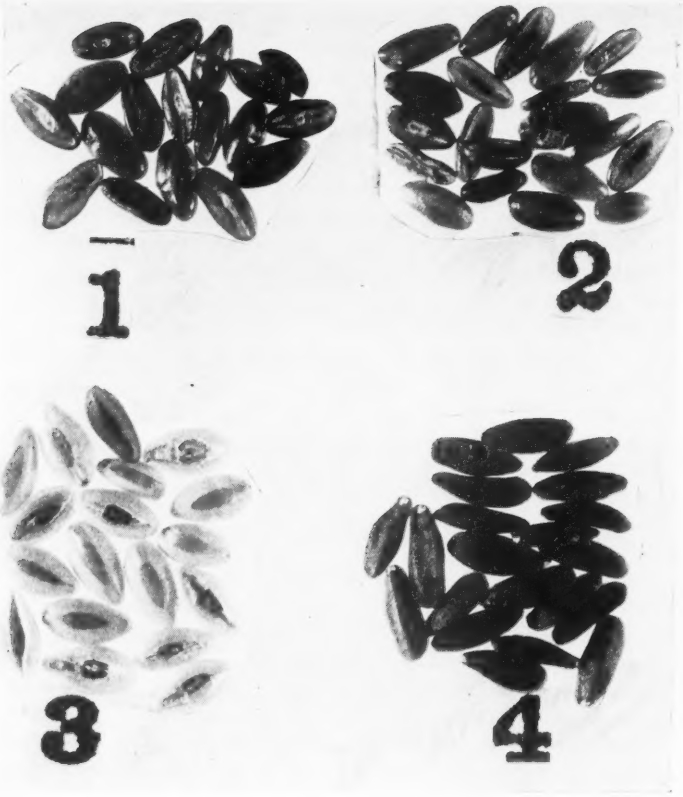
It can be stated, incidentally, that drug experts now outside the government service are inclined to disagree with these inside the service on the proposition that thyroid extract is dangerous as an agent for reducing weight. An outside food and drug expert, who has been prominent in government work in the past, expresses the opinion to Drug Markets that thyroid extract is a valuable agent for this purpose. He admitted that thyroid would tend to consume the tissues of the body, "but," he added, "that is just what reduction of diet does.

"The question is to do that thing in the right way. A certain amount of fat tissue might, perhaps, be sacrificed. But thyroid extract and a reducing diet may attack muscular tissue also. This may be particularly true in the case of a diet lacking sufficient proper proteins. That is what was the matter with the so-called eighteen day diet reducing system."

On the whole, the expert referred to expressed the belief that "it would be difficult, if not impossible, for the government to prove that thyroid extract is a dangerous drug."

However, the Food and Drug Administration seems sure of its ground against anti-fat preparations. One of its cases involving seizure of an anti-fat preparation concerned a so-called reducing wafer made on the Pacific Coast. This consisted of a cracker containing an extract from a laxative plant drug. It was alleged

(Continued on page 309)



The four seeds discussed by Mr. Clevenger: 1. P. Psyllium, 2. P. Lanceolata, 3. P. loeflingii, 4. Lallemantia Royeleana

Psyllium and Some Other Seeds

By Joseph F. Clevenger*

ALTHOUGH the seeds of different species of Plantago have been used in a number of European countries as a laxative for several years, their use and popularity in this country has been limited for the most part to the last five years. During this time the importation of these seeds has increased from a few tons to over 800 tons annually. The types imported have consisted for the most part of the *Plantago Psyllium* imported almost entirely from France, Spain, and Italy; and *Plantago lanceolata* from Germany. Increasing volumes of *Plantago loeflingii* have been imported from Bombay. In addition, the seeds of a Labiate, *Lallemantia royeleana* have recently been imported from India in appreciable amounts to be used for the same purpose.

During the course of examination of samples from lots offered for import, variations in the microscopic appearances of the seeds were observed. In order to obtain definite information as to identity, seeds of the various types were planted in the New York Botanical Gardens and their identities were subsequently determined.

About a year ago there was offered for import a consignment which had the general appearance of *Plantago Psyllium*. Upon closer inspection, however, it was noted that the seeds had a dull lusterless appearance rather than the shiny appearance characteristic of *Plantago Psyllium*. This aroused suspicion. Some

*Pharmacognosist at the New York Station of the Food and Drug Administration.

of these seeds were planted, in an attempt to grow the plants and thus enable final determination of identity, but they failed to germinate. All the circumstances suggested that they had been roasted in order to darken their color to simulate *Plantago psyllium*. In order to determine whether or not it is possible to roast lighter colored seeds of other varieties to simulate *Plantago psyllium*, some seeds of *Plantago lanceolata* were carefully and slowly roasted. The resulting product was entirely similar to the article offered for import. It is altogether probable, therefore, that the foreign shipper or dealer roasted seeds of *Plantago lanceolata* in an attempt to obtain for them the price paid in this country for *Plantago psyllium*.

Descriptions of Plants

Plantago psyllium Linn — Plantain Family

Annual, glandular—pubescent. *Stem* 4-18 inches tall, leafy branched. *Leaves* 1-2 inches long opposite with fascicles in their axils, hence appearing whorled, linear or linear lanceolata, margin entire with a very few glandular tubercles, base ciliate. *Peduncles* in upper leaf axils, usually the length of the leaves, fruiting spikes 1/3 to ¾ inches long ovoid, lower bracts sometimes spreading, hispid. *Fruit* 2, seeded. *Seeds*, deeply excavated 1/12-2/12 inches long, dark brown in color with a longitudinal light brown streak on outer surface. Surface, glossy.

Plant of Plantago Psyllium Linn

Plant of Plantago Lanceolata Linn

Plantago lanceolata Linn — Plantain Family

Perennial or annual, more or less pubescent; root stocks mostly short with tufts of brown hairs at the base of the leaves. *Leaves* narrowly oblong lanceolata mostly erect shorter than the scapes, entire or sparingly, dentate acute or acuminate at the apex, gradually narrowed into petioles, 3-5 ribbed, 2-12 inches long, ¼-1½ inches wide. *Scape* slender, channelled, sometimes 2½ feet tall; spikes very dense, at first short and ovoid, becoming cylindric, blunt and ½-4 inches long, in fruit, 1/3-½ inch thick. *Fruit* 2, seeded. *Seeds*, deeply excavated 1/12-1/6 inch long

(Continued on page 297)

Hydrogenated Oils as Ointment Bases

By Dr. William J. Husa*

WIDESPREAD use of hydrogenated cottonseed oil and peanut oil as cooking fats of the lard type is sufficient indication of the fact that these hydrogenated vegetable oils have certain properties that cause them to be preferred over animal fats such as lard and butter in certain culinary operations. One advantage is that the hydrogenated oil can be heated to a higher temperature without smoking, with the result that the outside of the food is cooked more rapidly and less grease soaks in; consequently the food is more easily digestible, and less of the cooking fat is used. Another advantage is that different foods can be cooked successively in the same fat, since odors are not absorbed. Furthermore, it is generally accepted that hydrogenated oils are much less liable to become rancid than ordinary fats.

In view of the fact that hydrogenated vegetable oils have replaced lard to a certain extent for edible purposes, it has been suggested at various times by pharmaceutical workers that these hardened oils might likewise be advantageously employed as bases for certain types of ointments. The report and recommendations regarding pharmaceutical applications are scattered in the literature of the past two decades. Some years ago, the writer, as a member of the research staff of a manufacturing corporation, took part in a two year study of the hydrogenation process; the experience of carrying out hundreds of hydrogenations of various types of oils, both in the laboratory and on a semi-plant scale, has given a background and point of view on which to base a sound, critical judgment of the progress and possibilities in the pharmaceutical uses of hydrogenated oils.

Hydrogenation may be defined as the reaction of free hydrogen with any material. Such processes are usually catalytic, and so it may be said that the foundations of hydrogenation were laid about a century and a half ago, when it was first recognized that in certain cases, substances could accelerate chemical reactions, apparently without themselves undergoing change. However, it is only somewhat over sixty years ago that the first organic hydrogenation was recorded; this was the preparation of methylamine by Debus, by the action of hydrogen on HCN vapors in presence of platinum black.

In the next thirty years, various other compounds were successfully hydrogenated from time to time, but all this work was overshadowed by the brilliant investigations started in the late nineties by Professor Sabatier and co-workers at the University of Toulouse. The work at this university in southern France brought about a great increase in the knowledge of the use of nickel as a catalytic agent for hydrogenation. Because of its high activity and low cost, nickel still holds first place among hydrogenation catalysts at the present time, a fact which shows the intrinsic soundness of the fundamental work of these French investigators. Sabatier's work led directly to a great development of catalytic hydrogenation, both as a laboratory tool for further scientific work, and as an industrial method of converting various commercial products into other forms which would command a higher price.

The way in which time and circumstances as expressed in price or relative supply often turn industrial processes topsy-turvy is well illustrated in the hydrogenation field. Previous to 1914, linseed oil was so plentiful in Germany as compared with hard fats that commercial hydrogenation of linseed oil was the order of the day. Two or three years later, in the United States, linseed oil, which was the only important drying oil at that time, was relatively so costly that considerable effort was devoted to the attempt to introduce more double bonds in such oils as cottonseed oil, in hope of thereby producing a drying oil suitable for use in paints. Thus the removal of hydrogen, the exact opposite of the hydrogenation process was eagerly sought, in direct contrast to the situation which existed such a short time before. This situation, however, was only temporary, since the manufacture of edible fats and soap fats by hydrogenation is now carried out on a large industrial scale.

The hydrogenation of vegetable oils went through a period of great technical development but such activity has now diminished and the variety of pos-

*Professor of Pharmacy, University of Florida.

sibilities has been boiled down to a few standard commercial processes. For use in ointment bases, the hydrogenated vegetable oils are the only hydrogenated products that concern us at this time.

The action of the hydrogen may be a true reduction or a dehalogenation, as well as a catalytic addition of hydrogen at ethylenic linkages. The latter effect, of course, is the one which occurs in the hydrogenation of vegetable oils. To explain the nature of the ethylenic linkage, we may consider the difference between ethane and ethylene. Ethane is C_2H_6 and ethylene is C_2H_4. Ethane will not take up more hydrogen, while a molecule of ethylene can take up a molecule of hydrogen, being thus converted into ethane. Ethylene can be made to take up two atoms of bromine, while under the same conditions ethane is inactive. Ethane is therefore spoken of as a saturated compound, while ethylene is spoken of as being unsaturated, thus implying that in the latter compound all the possible combining power or valence of the carbon is not being utilized. The extra valence of each carbon atom in ethylene is represented as an additional bond between the carbon atoms and this is spoken of as a "double bond" or "ethylenic linkage." Thus if one says that a compound has one double bond, or two double bonds, this simply means that the compound shows properties of unsaturation such that it can add on two, or four, atoms of hydrogen, bromine, etc.

Among the fatty acids, stearic acid, $C_{17}H_{35}COOH$, has no double bonds and its melting point is higher than that of oleic acid, $C_{17}H_{33}COOH$, which has one double bond. Oleic acid, in turn, has a melting point higher than that of linoleic acid, $C_{17}H_{31}COOH$, which has two double bonds. At ordinary temperatures stearic acid is a solid, while oleic and linoleic acids are liquids. The typical oils and fats are glycerides of a mixture of fatty acids, and the melting points correspond more or less to the degree of unsaturation of the fatty acids present as glycerides. It was recognized many years ago that it was theoretically possible to raise the melting point of fatty oils by addition of hydrogen at the double bonds. It was seen that less than one per cent. of hydrogen would be required to convert liquid olein into solid stearin. However, no practical way of bringing this about was known until after the work of Sabatier on catalytic nickel.

For the hydrogenation of oils on a laboratory scale, complicated apparatus is unnecessary. Hydrogen, preferably from a cylinder of the compressed gas, is passed through a mixture of the oil and finely divided nickel in one or more flasks which are kept on an electric hot plate at a temperature of 160-180° C. By having the inlet tube for hydrogen in each flask arranged to reach close to the bottom of the flask, and using a brisk current of gas, there is sufficient agitation without use of special stirring devices. The finely divided nickel may be prepared in various ways, of which perhaps the most convenient is the reduction of nickel oxide in a current of hydrogen. After reduction, the catlayst must be protected from the air by having it in an atmosphere of hydrogen or carbon dioxide. Detailed methods for preparation of catalysts and methods of hydrogenation are given in the book by C. Ellis on "Hydrogenation of Organic Substances" (D. Van Nostrand Co.)

The speed of hydrogenation is increased when the pressure of hydrogen is raised and for this reason most of the commercial sizes of hydrogenation apparatus are of the autoclave type. After the hydrogenation has reached the desired stage the oil is run through a filter press while hot to remove the catalyst. Processes have been developed for removing any objectionable odor or flavor in the oil, as for example by treatment with a current of steam under dininished pressure.

Hydrogenation is not to be thought of as a method of renovating a deteriorated oil; if the oil is rancid to begin with it will still be rancid when hydrogenation is completed. For edible or pharmaceutical purposes, the oil to be hydrogenated should be of prime quality.

Pharmaceutical Applications

In 1914, a writer in the Bulletin of Pharmacy suggested the use of hydrogenated oils in ointments on the basis of keeping qualities, stating that these oils showed no sign of rancidity after exposure to a damp atmosphere for 18 months.

The three years later, W. M. Linnett, Jr., reported that hydrogenated oil was an ideal ointment base, being a good carrier, quickly absorbed, practically free from development of rancidity, and economical. He said that simple ointment could be prepared from it by using half the wax that lard requires. Further observations by Linnett were as follows: Ointments of belladonna, stramonium, tannic acid, chrysarobin, nutgall, iodine, and sulphur made from hydrogenated oil were of very fine quality. Good results were obtained in the case of ointments of tar and phenol. For zinc ointment, the addition of five per cent. of castor oil was recommended. A satisfactory cold cream was made by the following formula:

White wax	1 lb.
Cottonseed oil	1½ pints
Hydrogenated oil	4 lbs.
Water	2½ pints
Borax	1 ounce
Tincture of benzoin	1 ounce

Perfume to suit (50 grains to the lb. of finished material).

In 1917 D. H. Lackey and L. E. Sayre reported some results on the hydrogenation of corn oil. This work was carried out to determine whether corn oil could replace olive and cottonseed oils in liniments, and whether hydrogenated corn oil could be used in such preparations as ointments and cerates. However, no definite tests on the use of hydrogenated corn oil were described, although it was concluded that "the one merit this hydrogenated product seems to have is its keeping quality."

Ernest R. Jones suggested, in 1918, the following formula for Ointment of Zinc Oxide:

Zinc oxide	200 Gm.
White wax	125 Gm.
Hydrogenated cottonseed oil (Crisco)	675 Gm.

"Melt the wax and hydrogenated cottonseed oil, add a small portion of the melted mixture and triturate with the zinc oxide till a smooth paste is obtained, then add the balance of the melted mixture and triturate till cool."

Jones stated that this base would satisfy those dermatologists who favored a base which would be absorbed and indicated that the keeping qualities were much better than with a lard base. The wax was used in the formula because the hydrogenated product used was a little too soft A further objection pointed out by Jones was that the hydrogenated oil, when melted alone, could not be cooled to a smooth product by any practicable means. He stated that the hydrogenated product used "is as quickly absorbed as lard, is cleaner, less liable to become rancid and is a more stable product in every way." He said that if such a product were marketed under a scientific name indicating its composition, it would be more desirable for pharmaceutical work.

Some interesting results on pharmaceutical applications of hydrogenated oils were published in 1919 by E. V. Kyser and C. A. Mayo. They pointed out that most oils, when hydrogenated to a low iodine value, become too hard for ointment bases. However, coconut oil, which already has a low iodine value, was hydrogenated down to an iodine value of one, and the resulting product had a melting point only slightly higher than that of lard. This hydrogenated coconut oil was particularly recommended for iodine ointment on the basis that the iodine would not be taken up to any extent by addition at the double bonds as in case of lard. All the ointments of the U. S. P. were prepared from a base containing hydrogenated coconut oil and stearin; the ointments were good in appearance and consistency but the keeping qualities had not yet been determined. It was also suggested that the wax in ointments could be replaced by a hydrogenated oil of higher titer.

In a paper presented before the Pennsylvania Pharmaceutical Association in 1920, W. W. McNeary stated that hydrogenated cottonseed oil was the most suitable of the various hydrogenated oils for use as an ointment base. Its keeping qualities were good, it did not granulate on standing as lard did, it retained its consistency in hot weather and at the same time could readily be manipulated in cold weather, and furthermore it seemed to be as readily absorbed by the skin as lard. He further reported on tests which had been made in a large hospital to compare hydrogenated cottonseed oil, petrolatum, and lard as bases for ointment of zinc oxide. The dressings with a base of lard and hydrogenated oil became dry in about the same length of time, while the petrolatum dressing remained greasy. McNeary recommended that the Revision Committee give due consideration to the admission of hydrogenated oil to the Pharmacopoeia, and that standards be set for the melting point and other physical characteristics.

In 1928, Gfeller reported that an ointment base known as "Astra fat" had been adopted by European dermatologists. This was said to be a hydrogenated peanut oil, of iodine number 63. As to its properties and advantages, it was white, tasteless and odorless, became frothy with water, did not become rancid as rapidly as lard, was cheaper than lard, was prepared under sanitary conditions and was not irritating as lard. Furthermore, clinical tests had shown its advantages in treating eczema when combined with proper medicaments.

Fiero has recently published a description of experiments carried out with a hydrogenated cottonseed oil of iodine number 75. This product when exposed in a warm, light place for 25 weeks did not develop rancidity, while under the same conditions lard became rancid in three weeks. When applied to the human chest, the hydrogenated oil was absorbed about as rapidly as lard. Tests were made on the use of the hydrogenated oil in ointments. In the case of belladonna ointment, a very satisfactory ointment was made by use of hydrogenated oil in place of petrolatum in the official formula. Chrysarobin ointment U. S. P. soon developed a dark color which did not appear when hydrogenated oil was substituted for the wool fat. A white, odorless, smooth ointment of ammoniated mercury was prepared using hydrogenated oil and five per cent. of white wax as base, while the official product is very tenacious and has the odor of wool fat. A smoother iodine ointment was made by replacing the wool fat in the official formula by 75 Gm. of hydrogenated oil and 5 Gm. of wax. Iodoform ointment and sulphur ointment were satisfactorily prepared from a base of five per cent. of white wax with hydrogenated oil; the latter ointment was used in several cases and found to have satisfactory therapeutic properties. Hydrogenated oil was very satisfactory in tar ointment and zinc ointment.

Present Status

Stability. The claim that hydrogenated oils are more stable than ordinary fats as regards the development of rancidity is well established. Furthermore, the fact that hydrogenated oil can be heated to a higher temperature without smoking is advantageous in cases where it is necessary to sterilize the base by application of heat. It appears sound, therefore, to rate hydrogenated oils considerably above lard as regards stability.

Absorption. All available evidence indicates that hydrogenated cottonseed oil of lard-like consistency is absorbed by the skin about as rapidly as lard. It would be very helpful to acquire more evidence of use in hospitals, etc. to determine whether hydrogenated oil possesses definite advantages over lard or other

(*Continued on page 299*)

Carotin and Vitamin A

By Frank M. Schertz*

CAROTIN is a topic of interest in scientific circles. Only 105 years ago, carotin was first described. Twenty-six years ago its correct empirical chemical formula was worked out, and only in the last few years have we learned very much regarding its graphical configuration.

The chemical characteristics of carotin are about as clearly defined as the clinical signs of health. The underlying causes of health are as well-known as the functional nature of carotin. Health is already a daily mental diet and carotin because of its close chemical association with vitamin A is rapidly becoming one. Health, a topic of all men in all ages, and carotin, a topic of a few, seem in some way to be fundamentally related to each other.

Just twelve years ago carotin was first believed to be associated in some way with health through its relation to vitamin A. Negative evidence has appeared but always further scientific investigation has shown that the tests were not carefully conducted or the diets from which conclusions were drawn were not completely understood. At times, solutions which rapidly deteriorate were used, and again the diets were deficient in vitamin D. Today scientific evidence completely justifies the view that carotin and vitamin A are not identical chemical substances yet there apparently is a close chemical relation between them. Carotin is considered the precursor of vitamin A. Today, nobody knows just how vitamin A is formed from carotin, yet this change undoubtedly takes place in the bodies of animals as well as in the cells of plants. It may be an oxidation, a reduction, an intramolecular change or some form of alteration not yet understood.

Further knowledge regarding the exact chemical configuration of carotin has lately been sought, to explain the physiological function of carotin in the cells of plants and to explain the chemical relation of carotin to vitamin A. Carotin and the closely related carotinoid pigments have been studied with this end in view. The chemical molecules have been subjected to oxidation, hydrogenation, and halogenation. Pictorial chemical representations of the structure of carotin have been made, which account for the reactions known at the present time. Each worker or group of workers draws the picture which seems best to explain his own chemical experimentation. At the present time no single representation seems to satisfy all of the workers.

Isoprene nuclei, conjugated double bonds, and possibly bicyclic rings play a part in explaining the structure of the molecule.

In piecing together the story of carotin, several methods of procedure may be followed.

The compound itself may possibly be synthesized. The synthesis of squalene, a hydrocarbon of fish-liver oils, is a noted example which was produced by the polymerization of six isoprene molecules accompanied by partial reduction. Phytol, a derivative of chlorophyll, also has recently been synthesized. Synthesis undoubtedly will aid in understanding the chemical structure but at the same time such a procedure does not explain the formation of organic substances in growing plants.

Oxidation hydrogenation, or halogenation are commonly accepted methods of determining the nature of a molecule. Our present knowledge regard-

If Vitamin A submits to extraction or synthesis, it appears that Carotin will be an important raw material for drug manufacturers. Mr. Schertz is probably as well informed on the subject as any one.

*Bureau of Chemistry and Soils, U. S. Department of Agriculture. Presented at Buffalo meeting of American Chemical Society, Sept. 2.

ing the make-up of the carotin molecule has been largely obtained by studying the degradation compounds. Each method has told us something about the nature of carotin, but as yet the story is very incomplete.

From another angle very much has been recently learned about carotin. Highly purified carotin has been found to consist of at least two slightly different chemical substances. By fractional absorption or fractional precipitation with iodine, *a* carotin and *b* carotin have been isolated. From carotin-tetraiodide, a third compound, iso-carotin has also been obtained. All three compounds analyze as $C_{40}H_{56}$, but their solubilities, decomposition points, and spectral properties vary. Work is in progress to identify one of these carotins with vitamin A. Carotin is an example of a pigment mixture of closely related compounds occurring simultaneously in a plant. Carotin as isolated would seem to be a mixture of isomers, differing greatly in their optical activity but relatively slightly in the arrangement of double bonds, and separable only with the greatest difficulty. A similar condition exists in the case of xanthophyll. Leaf-xanthophyll, lutein, and zeaxanthin are isomeric compounds. They each contain two alcoholic hydroxyls but differ in optical rotary power. Differences in the three xanthophylls may be due to optical or to cis-trans, isomerism, to the location of the hydroxyls, or to that of the double bonds. All isomers of carotin and of xanthophyll are alike in that they possess eleven double bonds. Xanthophyll prepared from leaves of a variety of plants possessed the same decomposition point and the same specific rotation. The mother liquors contained only traces of other xanthophylls. The separation of xanthophyll into its components is effected by adsorption on a column of calcium carbonate. Both lutein and xanthophyll are generally present in plant extracts but the relative amounts vary and may be modified by changes in structure produced by methods of extraction and isolation.

The polarimetric method is perhaps at present the most reliable method of distinguishing the closely related xanthophylls from each other. The non-homogeneity of leaf xanthophyll has also been proved by isolating analytically pure preparations of widely varying rotations (92-137°) from stinging nettles.

The study of naturally occurring plant isomers offers much in the way of understanding what is taking place in plant cells. The steps in the transformation of a molecule are too small to be measured by analytical chemical means. The work on isomers not only will assist us in understanding the chemistry of plant cells but it also will be valuable in converting substances such as carotin into vitamin A. Learning how to convert carotin into vitamin A will be valuable but this value cannot be compared with the knowledge gained regarding the processes going on in living plant cells.

Work done on the isolation of plant pigments in the Department of Agriculture laboratory seems to show that during the life of a plant great transformations occur affecting all of the chloroplast pigments. At or near the flowering stage the pigments begin to undergo great changes. The nature of these changes is not understood. During the actively growing stage the pigments may be isolated in rather large amounts but as the plant flowers and seeds, progressively smaller amounts of the pigments can be isolated from the same amount of dried leaves. Undoubtedly a larger percentage of isomeric pigments exists at this time; also, the chloroplast pigments in cowpea leaves show marked difference in physical properties from the pigments present in nettles. A direct attack on the pigment change as the plant matures, from the standpoint of isomeric compounds, offers perhaps our greatest hope of understanding plant chemistry. In this way pigment transformations in the growing plant can be most easily followed.

Still another method of getting the story of carotin comes to our attention. Alcoholic solutions of carotin may be kept in stoppered glass test tubes for weeks in daylight at room temperature and for months in a refrigerator without noticeable fading. Alcohol and chloroform solutions of carotin when exposed in water-cooled quartz tubes to ultra-violet light or in cellophane covered cells to soft x-rays, produced a small amount of brown resinous material on the walls of the tubes. When the filtered solutions were evaporated to small volumes and cooled, sparkling colorless crystals separated. Fading of the solutions was much more rapid with soft x-rays than with ultra-violet light. After irradiation in this case there were no bands in the visible region and none in the ultra-violet.

The use of monochromatic light and spectrometric methods offers a ready means of producing changes in the carotin molecule without resorting to drastic chemical methods. The study of chemical changes produced by the action of electromagnetic waves becomes all the more alluring since we have learned that light seems to act like a stream of particles, and even the most immaterial of substances takes upon itself the form of matter.

In order to adequately study the chemical changes in carotin it has been found necessary to work out methods for its isolation on a larger scale. At the present time methods for the isolation of carotin in rather large quantities are already in operation at the Fixed Nitrogen Research Laboratory. Of the chloroplast pigments carotin has been the one most difficult to isolate successfully. Problems in filtration, crystallization, storage of leaves, drying conditions, and state of pigments in the leaves, have all received attention. At the present time conditions suitable

for producing a leaf powder rich in carotin as well as the other chloroplast pigments are pretty well-known. Nettle leaves dried at 45-60°C. and stored at room temperature in friction top gallon tin cans, after one year, gave a carotin solution in which no crystals formed. Leaves from alfa'fa in bloom produced solutions from which only a very few crystals were obtainable, even when extracted immediately after drying. Nettle leaves stored in friction top cans sealed with paraffin, after one year, gave only a very low yield of carotin crystals. Under storage conditions carotin seems to undergo a progressive and rapid alteration. The largest yields of carotin, about 1 gram from 5 kilograms of dry leaves, have been obtained from leaves soon after drying. Leaves from plants that have reached the flowering stage also seem to give a low yield. Even under the very best conditions the yields of carotin are small. From carrots larger yields of carotin may be obtained for a bushel of carrots will produce a gram of carotin. However, in the long run, carotin will be more economically isolated from green leaves because in this case other valuable plant products can be isolated from the same dried material.

A careful study of the literature on vitamins shows that the conditions necessary for the production of leaf meal rich in the chloroplast pigments also produces leaf meal rich in the vitamins, especially vitamin A. Alfalfa leaves from plants dried by artificial heat for 30-35 minutes at 127-129°C. contained at least seven times as much vitamin A as leaves from hay cured in the field with a loss of the greater part of its green color. These same leaves contained only a small amount of vitamin D. Leaves, sun dried, without exposure to dew or rain, showed an increased antirachitic potency accompanied by a decrease in vitamin A. Carefully dried grass has 60% of the vitamin A activity of fresh grass. Alfalfa, clover, timothy, and spinach freshly dried at 60°C. furnished as much vitamin A as did an equivalent amount of butterfat. In general the leaves of rapidly growing young plants appear to be rich in vitamin A, containing from 60 to 200 units per gram. Of vegetables, carrots are the richest in vitamin A, containing from 25 to 70 units per gram. The value of carotin in the diet may be clearly seen when we know that weight for weight carotin has been found to be biologically more active than cod liver oil concentrates.

Vitamin A in the state in which it exists in leaf tissue has been found to be relatively stable. Temperatures necessary for drying leaves seem to affect it very little.

Consequently, one of our most hopeful sources of material for the study of vitamin A is the mother liquor from which pure carotin crystals have been obtained. Investigators have already shown that the petroleum-ether-soluble carotin fraction contains an abundance of vitamin A. The petroleum ether mother liquor obtained from the isolation of chlorophyll, from the standpoint of vitamins is well worthy of most careful investigation. In the isolation of the chloroplast pigments, the mother liquors rich in vitamin A offer a new hope to those desirous of obtaining the vitamin in pure crystal form. The saponified mother liquors are known to be rich in sterols and other colorless crystallizable compounds.

The various liquors obtained in the methods used to isolate the chloroplast pigments should be worthy of the attention of those desirous of obtaining any of the vitamins in pure form.

So far as known, no attempt has ever been made to isolate or even to study the vitamins present in the various fractions from the isolation of the chloroplast pigments. Attention in our laboratory has been centered on producing the largest possible amounts of the pure chloroplast pigments from a given amount of leaves. Observations only have been made regarding vitamins but the time is now ripe for concentrated effort of the most searching kind upon the processes going on in all green leaves.

Already the chloroplast pigments have been found to be definitely associated with the composition of the soil upon which plants grow. A similar relationship has been found to exist for some of the vitamins. Only healthily functioning chloroplasts seem to produce plants rich in vitamins. The chloroplast apparently is the origin of these life-producing substances.

In studying the metabolic variations of carotin in its relationship to vitamin A, carotin was found to be concentrated in the blood plasma or serum. Almost none was present in the red blood cells, not even in the bloods which contained large amounts of carotin. In normal human blood sera the average was 0.8 Lovibond units per 10 cc., although one result was 4.5 units. With herbivorous animals much higher values were obtained. Ox sera gave 17 units while cow sera taken in September gave an average of 14 units. A seasonal variation occurred in these animals. Higher values were found in the fall after a summer on fresh grass, while much lower amounts were obtained after the usual winter fee.

Observations on the practical value of the carotin-vitamin A relation might be made from many other angles, such as, influence on pregnancy, development of embryos in eggs, and influence upon birth and health.

The influence of the canning industry as it affects our changing dietary perhaps has received too little attention. From the standpoint of health, canned goods have many distinct advantages. Naturally ripened fruit and vegetables are high in vitamin content. Such products are canned promptly after harvesting. Changes that take place in open kettle cooking do not take place in commercial canning. The vitamins in canned goods are apparently stable and consequently the canned material may be stored for long periods.

Carotin, chemically, is everywhere being considered as the precursor of vitamin A; physiologically, it has the characteristics of vitamin A and psychologically, conceptions regarding the true nature of carotin may be looked upon as precursors of conceptions far more cosmic regarding the nature of all of the vitamins.

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Industry's Books

Health and Physical Education, by Jesse Feiring Williams and Clifford Lee Brownell, 117 pages, Bureau of Publications, Teachers College, Columbia University, New York.

The facts, guides and standards by which satisfactory programs of health and physical education may be developed.

Peptic Ulcer, 78 pages, The BiSoDol Co., New Haven.

A symposium of the outstanding contributions to medical literature on peptic ulcer divided into three general sections, etiology, diagnosis and treatment.

Medicine, by M. G. Seelig, M. D., 205 pages, The Williams & Wilkins Co., Baltimore, Md., $3.00 Net.

The second edition of this interesting historical outline of medicine arranged chronologically and in compact form for the medical student and the lay reader.

Lane Lectures on Pharmacology, by Walther Straub, 87 pages, Stanford University Press, Palo Alto, Cal., paper, $1.00 net, cloth $1.50.

Features a lecture on chemistry and biochemistry of digitalis, perhaps one of the most exhaustive and authoritative pieces of work on that subject. Also lectures on intoxicating drugs, ways to ideal anesthesia, general pharmacology of heavy metals, and camphor and the modern analeptics.

Editor's Correspondence

(Letters published here must not be construed as necessarily reflecting the editorial policy or opinions of this publication. The editors assume no responsibility for the opinions expressed here, the only requirement being that all communications be signed and written on company stationary.)

Government Persecution

Editor, Drug Markets
Sir:

Your constructive campaign in the manufacturer's behalf against the persecutions of the Food and Drugs Administration has been followed with much interest.

The great trouble with these crusaders is that, under cover of the prosecution of a very few notorious frauds, they carry on an unremitting war on legitimate business engaged in manufacturing package medicines which in many cases have become standard household remedies through many generations. They can close down your business, demand that you stop making this or that, and demand that you stop making claims for such and such a remedy even though the Pharmacopoeia may show such results to be inherent in that remedy. And they continue to force the use of emasculated and useless labels upon the manufacturer under the threat of multiple seizures, despite a recent snubbing by the Courts.

It is hard enough anyway in these hard times for an honest business man to make an honest living without the persecution of a horde of government parasites.

A. H. J.

Should Cooperate

Editor, Drug Markets,
Sir:

It is high time the manufacturers of proprietary medicines took definite steps to secure relief from the dictatorial and bureaucratic methods of the Food and Drug Administration. Anybody who read the list of diseases together with the accompanying ultimatum from W. G. Campbell, reprinted in your July issue, should realize that the time has come for csome oncerted action in this direction.

I believe that anyone with an open mind will agree with me that government should cooperate with the business man and not attempt to put him out of business, which seems to be the main purpose of Campbell et al.

I hope that the Proprietary Association will make one more effort to enlist the cooperation of the Department; I hope that you will continue your intelligent fight editorially against the unintelligent dictums of the Department; but I hope that all of us, having made this one more effort, will cooperate in a real fight against the present administration methods which will result in the ultimate unseating of government officials of that type.

C. A.

Private Brands

Editor, Drug Markets,
Sir:

Your editorial "Private Brands Again" should be called to the attention of every drug manufacturer for it may indicate to him the way in which his own salvation lies.

There are so many angles to lower prices on branded products that I, for one, had about decided that it would be best to keep prices at established levels. After all, sales costs and advertising costs are just as high as ever and the decline in raw material costs is small in comparison. But on the other hand, competition on a cost basis is more stringent than ever before and the passing on to the consumer of the savings on raw materials, when those savings are of any importance, may be good business. Your editorial would seem to indicate that as would events in the coffee industry, where branded products were *forced* to lower levels by the entrance of a competitor who passed on the lower costs.

E. F. S.

Lavender distilling post in the mountains of Southern France

Lavender

Part II

ACCORDING to Rodié's monograph, the word lavender, or *lavende* in French, comes from the Italian *lavandula*, which, in its turn, comes from the Latin verb *lavace*, to wash, because this plant was used to perfume the baths. The actual word lavender, or *lavende*, did not make its appearance until the end of the sixteenth century. Up to that time the lavenders, as well as their products of distillation were known under the name of aspic.

From the beginning of 1500, Jerome Braunschwig had signalled that the oil of aspic came from Provence, in Southern France. Valerius Cordus and Walter Ryff, in the sixteenth century, made the same observation. The provençal botanist Porta, secret doctor of Henry III, who had gone to study at faculty of Montpellier in 1565, and who had learned to know in their natural habitat the plants of Southern France, speaks of the distillation of lavender, giving to it its real name.

Jean François Demachy, in his work, *L'Art du destillateur des eaux-fortes*, Paris 1773, gives on the distillation of lavender information so true to life and precise that this information has been quoted by writers on lavender in all parts of the world. The following extracts are among those found of great interest among the writers referred to:

"When the species of lavender, called wild lavender or aspic, which grows abundantly on the hills and praries of Provence is in bloom, the shepherds seek out the business men of the town who deal in the oil, to find a large alambic of copper, equipped with a tin head and a rather high tripod, or trivet. They then settle down in a prairie, or field, at the side of a brook and distil the oil of aspic in the following manner. They cut the spiked flowers of the aspic, filling the heating apparatus of the alambic with them, adding water, and then covering the alambic hermetically with the head. After that a good fire is lighted below the tripod, using for this purpose dried vegetation, they gathering in a large glass bottle the oil which runs from the alambic in a small stream. When they have gathered the quantity of oil which experience has taught them is to be expected from an alambic full of flowers, the still is again filled with flowers, in order to recommence the distillation process. They carry out this operation from place to place until the end of the flowering season.

"The oil obtained is placed into leather or goatskin bottles. After the summer season has passed, the distillers come back to the town to return to the proprietor the alambic described, and they then sell at a reduced price the fruit of their labor, carried out in spare time, which for them constitutes a net profit. Some times they leave, intentionally, in their leather bottles water mixed with the oil, and which they try to sell at the same price, but the buyer invokes the precaution of keeping the leather bottles in a vertical position for several days before decanting the product. When this precaution is carefully followed, the water is the first liquid to appear while decanting.

"This oil, according to its odor, is not one of the finest, but it differs however from oil of turpentine by reason of its yellowish color and its lavender odor. The painting and varnishing trade makes wide use of it."

As Rodié points out, when reading the foregoing descriptive paragraphs of what happened back in 1773 one would be tempted to think that they had been written no more than several years ago, rather than a century and a half ago. Everything is taken up, even to the turpentine used to adulterate the lavender oil. The distilling apparatus described is one that may be found in numerous places throughout Southern France even at the present time, despite the fact that many of the distilleries are now modernly equipped.

It is toward the end of the XVIIIth century that lavender oil began to attract the attention of chemists. De Saussure, a Frenchman, made a study of it in *Les Annales de Chimie et de Physique*, and Arezula, a Spaniard, discovered the camphor present in lavender plants, which would seem to indicate that the oil studied by him was aspic. Quite naturally, since that time oil of lavender has been the subject of many studies and experiments by chemists in laboratories all over the world.

Oil of lavender comes either from the Southern part of France, the Alpine districts, or from England, although the English lavender oil is admittedly different from the French product in many respects.

In France, as already mentioned last month, lavender grows wild on the mountain slopes of the Alpes-Maritimes department, the Basses-Alpes, Drôme, Vaucluse, Gard, Hérault and even Isère regions of France, sometimes at an altitude of 2,000 meters. The lavender plants found in the mountain districts are very much sought after, as they supply an oil that is of excellent quality. It is in the mountainous sections of France that the ambulant distillers can still be found plying their trade, making this one of the most picturesque trades of France. The oil distilled is frequently sold in job lots to the industrials of Grasse, and for this purpose there is held fairs like the one that is staged at the town of Digne each year, after the distillation period is over. True, a number of the larger firms of distilling perfumers have installed their own distilleries in the mountains, but the ambulant and individual distiller of lavender is still in existence, and will remain so for some time to come. This is particularly true because of the fact that much of the lavender on the mountain slopes, very greatly sought after for its fine oil, is very hard to gather. For this reason the ambulant distiller fills a distinct need in the lavender distilling business.

All of Southern France is said to produce more than 60,000 kilograms of lavender oil of different qualities and strength in esters. This figure has, during the past few years, varied greatly, particularly due to the period of over-production that struck the lavender branch of the distilling perfumer's business. A certain amount of equilibrium is making itself felt this year, and the over-production bugbear is now bound to decrease in importance, for the growers of lavender have, in many instances, cut down on their plantations. This is especially true where growers have learned that lavender growing is not the open sesame to wealth, particularly when an economic crisis hits the world.

As already mentioned in passing, the lavender grown in England, at Mitcham, for example, produces an oil possessing an odor that differs from that of the French oils of lavender, although in recent years considerable time has been spent in producing what the French distilling perfumers call the Mitcham type of lavender, grown in France.

In England the lavender plant is cultivated, and it does not grow wild there as it does in France.

It has been said that the lavender cultivated in England is really a lavandin, approaching very closely the true lavender, Rolet expressing this view in his work on lavender. History has it that the Protestants of Diois (Drôme), in Southern France, driven out of France by the revocation of the Edict of Nantes, introduced the lavender plant in England. Oils of Margate are given by Rolet as being very low in ether content (7 to 11 per cent), something like the Italian lavender.

In certain soils, like at Mitcham, in Surrey, lavender may be cultivated for a period of six years, provided that the old plants are carefully torn out and new cultures planted. Distilling time varies, with the usual period coming the last days of August or the first days of September.

The lavender plant is one of the most characteristic of the cultures found in the Mediterranean region, especially rich in labiates. Reports have gone out from time to time that lavender may be found in Morocco or other parts of Northern Africa. This is not true, according to Rodié, who also states that is an error to speak of the lavender of Spain, as this culture grows only on the French frontier. However, because in Spanish aspic is known as *Lavanda*, confusion has arisen in the works of certain authors writing about lavender.

Lavender, in order to thrive, requires calcareous soil. There are persons who take exception to this statement, says Rodié, maintaining that lavender also

grows successfully in granitic soils. He points out, however, that it is not so much a matter of the chemical composition of the soil as its concentration in hydrogen ions and hydroxyles, opinions relatively recent, but which have changed very much the manner of regarding certain plants among the geobotanists.

Whatever the opinions may be, in nature lavender grows exclusively on secondary or tertiary calcareous soils. It seems to prefer the jurassic and cretaceous groups. The appearance of sandstone usually stops its growth, the classical example being the valley of the Vayre, at Annot (Basses-Alpes), where the right bank of the valley, calcareous, favors the lavender plants so renowned in this section, while the left bank, on the sandstone of Annot, favors a forest of chestnut trees, (known for its rare plants), fails to grow any lavender plants whatever.

The introduction of elements other than calcium, as long as the base remains alkaline, does not harm lavender. Among other conditions reacting upon the life of the lavender plant are the matters of altitude, dryness, wind and location.

Altitude comes first in order of importance, although this is a variable. The altitude seemingly preferred by the lavender plant is between 800 and 1,200 meters.

Lavender holds up very well under extreme dry weather, but it seems to dislike humidity. The winds do not harm it any, even the mistral, cold Northwest wind in the Mediterranean provinces of France. Rather this wind seems to react favorably, freshening the plants up in a way that does them good. Location is of comparatively little importance, so long as the spot where the lavender is growing be free of humidity. Some hold that the lavender must, in order to thrive, face the sun continually, but this is not altogether true. A number of large areas are very productive, though not especially chosen for location. Quite naturally, the sum is of more aid to the successful growing of lavender than the lack of it, but the point is that lavender will grow well in the proper soil, no matter what the location is, so long as it is protected from the wet.

The lavender plant is subject to several enemies, vegetable and animal, but it generally wins out, if certain conditions are as they should be. Which means that those cultivating lavender can, very easily control the advance of the lavender plant's enemies, whether vegetable or animal, if the proper precautions are taken.

Lack of labor for gathering the lavender flowers growing wild in Southern France, which lack exists this year in the Avignon region, has brought with it a wide development in cultivated lavender. Lavender growing wild on the mountain sides has, it is admitted, excellent qualities from the distillers' point of view, but to gather enough of the wild plants or rather their flowers requires labor that is cheap enough, and, of course, easy to employ. Both these requirements are very hard to fill in France, the country *par excellence* for non-employment. It has been said, and truly at times, that apples are rotting in Normandy, because there are not enough persons available to pick them. Certain farming sections, like those spread throughout the rich Southern part of France, simply can not secure enough labor to carry on as they should.

Cultivated lavender plantations have been established particularly in the following regions of France: Drôme (Nyons, Die, etc.); Vaucluse (Valréas, Apt, Sault, etc.); Bouches-du-Rhône (Jouques, Saint-Remy, etc.); Basses-Alpes (Saint-André, Lambruisse, Gréoux, Annot, Barréme, Omergues, Noyers, etc.); Var (La Roque-Esclapon, Mons, Seillans, Chateaudouble, etc.); Alpes-Maritimes (vicinity of Grasse, etc.). According to Rodié's opinion, all of the oil produced from the plantations which have been established in the places mentioned would hardly total one-tenth of the French oil of lavender produced throughout France.

As already stated, the best soil is calcareous ground, and this is prepared in the springtime, in the same way as one does for the grapevine. Planting is done in the autumn, and the best results for the cultivator of lavender is obtained from seeds. Slips or cuttings can also be utilized. A good method is to take small plants from established lavender areas, choosing the youngest plants, and then caring for them in a nursery over a period of six months before placing them. French planters take great pains to secure the best plants available, as the quality of the oil obtained naturally depends upon the choice made.

Mention has already been made of the fact that many persons in France hold that the only lavender oil worthwhile distilling is that taken from the wild lavender plants. From the results achieved through cultivation this opinion is somewhat in dispute, although it must be admitted that the establishment of plantations is a comparatively expensive process. Just whether the advantages outweigh the disadvantages is still a matter of speculation.

There has been nothing definite found up to the present time as to just what fertilizers to use in order to produce the dseirable qualities of lavender oil. Wild lavender, without any aid whatsoever, gives an oil that is sought after. Cultivated lavender has to be experimented with, although it has been noted that nitrogen acts the best in connection with lavender cultivation. Phosphoric acid is also recommended, although its effect is considered to be less pronounced than that of nitrogen in advancing the flowering and influencing the yield of oil. A good figure per hectare in number of plants is given as 10,000, in order to prevent the plants from being placed too close.

When plantations of lavender plants were first established those doing so had great hopes for the duration over a satisfactory period of time. However, it was found that the plantations could not last more than seven years, with a gradual diminution in value

after the fifth year. Apparently, the reason for the disappearance of the plants is not to be found in any particular malady, but rather because of the fact that the lavender plant does best over a long period of time in its natural habitat. Several methods for lengthening out the life of lavender plantations have been experimented with, one of them being periodical burnings by fire, due to the favorable action of the ashes that are left. However, all of the methods attempted have not given any definite results which can be counted upon under any and all circumstances.

The yield per hectare of the cultivated is a variable. For a lavender plantation of 10,000 plants to the hectare, the yield the second year may be 2,000 kilograms, with this amount increasing to between 3,000 and 4,000 kilograms near the fourth year. After that there is a steady decrease. Yield in oil is also a variable, with an average being 850 grams of lavender oil per 100 kilograms of plants.

Compared with this, the wild lavender often produces less oil per 100 kilograms of flowers, but the oil itself is, frequently, of a finer quality, with a bouquet that is desired by certain purchasers of lavender oil.

A number of the large firms of distilling perfumers prefer to work their plantations intensively for a few years, and then write them off for new ones. Commenting upon the yield of oil per hectare, Les Parfums de France, recently gave the following table by years:

6 years old:	18 to 32	kilograms of oil per hectare						
5	"	"	14 to 30.5	"	"	"	"	"
4	"	"	18 to 30.4	"	"	"	"	"
3	"	"	18 to 23	"	"	"	"	"
2	"	"	8 to 10	"	"	"	"	"

The foregoing tabulation naturally shows a relatively high yield in oil, brought about, the writer of the article on lavender states, through an intensive application to the problems involved in cultivating lavender plants. One of the disadvantages found in connection with such yields is that the various production expenses are far too high to allow for any profitable sales of oil, particularly in view of the crisis and low prices existing at the present time.

Gathering of lavender is carried out in the various regions in accordance with the conditions existing there. The limits, as a rule, are, however, generally speaking, from the 1st of June to the last of September, with most of the lavender in Southern France being gathered between the first of July and the last of August. Best results for distillation are obtained from the flowerings of the first days, and in England, for example, huge areas are cleared of flowers within a very short time, in order to obtain the best possible oil.

There is a great amount of difference of opinion regarding the best time to distil the lavender flower, the growers-distillers in the mountainous sections holding that the best yield per hectare, or per area, is secured from flowers just in full bloom. Some of the distilling perfumers, however, are of the opinion that the flower should not be distilled until fully opened, and even slightly faded, in order to secure the highest yield in oil.

All of the foregoing is, of course, open to conjecture, and one man's experience is as good as another's. Experiments are being carried on by a number of chemists, but these experiments have, in many instances, not produced any fixed, definite conclusions. Each distiller, therefore, does what he can and according to his light, producing the type of oil that happens to be present in the flowers he is distilling.

This accounts for the large variety of lavender oils, in a way, for in essential oils the lavender products produced certainly vary greatly. The consequence is that adulteration in connection with lavender oils is a practice so common that the statement is made in the Grasse region by certain chemists that no one today, except a chemist, knows just what *pure* lavender really is.

There is more than a little truth in this statement, because one can frequently see a prospective purchaser of lavender oil, who is seeking a *pure* lavender oil turn away in disgust from the odor of a *simon-pure* lavender oil. Why, because the lavender oil he has purchased before was not pure, in the same sense that the oil he has just smelled is pure. In other words, it is as wide as it is long, with many of the doctored oils taking precedence. People get an idea of what lavender should smell like, and then they turn away from anything that differs from that preconceived odor.

With lavender oil this is not a true test in any way, because one can stand right next to a lavender still in the mountains of Southern France, gather up the lavender oil in a bottle, and never recognize it. Each area produces a different type of oil, with ester content, etc., varying in proportion. The consequence is that the variety of lavender oils on the market in France is simply stupefying, with each type of oil carrying a guarantee of purity.

Foquet describes lavender oil, taken from the *Lavandula vera*, DC, by distillation, as follows: Pale yellow liquid, or slightly yellowish green; amount of lynalyl acetate varies between 35 and 45 per cent; it is falsified with oils of spike-lavender (aspic), turpentine, rosemary, etc.; density: 0.880 to 0.890; solubility: 1 volume of oil in 2 to 3 volumes of 70° alcohol.

Quite naturally, there is considerable difference to be found in the analyses of the various lavender oils produced, and even the French oils themselves as already explained, vary greatly. Disappointment is expressed among the producers of lavender oils in France with respect to the requirements of the various pharmacopoeias throughout the world. The U. S. pharmacopoeia, of course, also comes in for its share of criticism, with the hope that a change will be effected within the near future.

As stated in Les Parfums de France: "The pharmacopoeias very inadequately equip the analyst for

(*Continued on page 309*)

Rose Bulgarian For 1931

By G. Karaivanoff

The annual report written especially for Drug Markets in Bulgaria is presented this month. Especially interesting are the views shown on page 251 showing scenes at the Rose Carnival; stills, warehouses, and other typical scenes of the production of rose oil in Bulgaria.

THIS year the Bulgarian rose harvest lasted for about a month. In the lower regions the gathering began the 19th of May, terminating about June 20th in the mountainous districts. These latter are always colder and subject to greater delays than the former. This year the rose bushes were in excellent shape and everyone expected a bumper crop of flowers. At the beginning of the season these predictions were upheld by the events that transpired, the flowers opening naturally and abundantly, with a good yield of essential oil of rose. After fifteen days had elapsed, however, the climatic conditions changed in an adverse way, damaging the flowering activities of this culture. Strong rains fell, followed by several very hot, clear days, all of this causing the buds to fall before they had opened, with the result that although this year's harvest lasted a little longer than the one last season, the yield was below that of the preceding year.

The amount of roses predicted for this season was not nearly attained. In other words, instead of going beyond the yield of 1930, the year 1931 showed a marked decrease. This is true despite the fact that more land surface was planted in rose trees this season than last. In fact, the peasants that had for some time neglected the roses were encouraged by the prices paid last year and increased the acreage of rose plantations. For example, in the arrondissement of Karlovo, which leads as to number of plantations, yield in oil, etc., some 45 villages this year went into the raising of the Bulgarian type of rose. The number of hectares planted numbered 3,615. In the arrondissement of Kazanlick 40 villages occupied themselves on a surface area of 1,478 hectares against 1,367 hectares in 1930 and only 1,290 hectares in 1929. The arrondissement of Brezovo had under cultivation 1,229 hectares.

Altogether in the Valley of Roses 127 villages went into the rose business this year as against 103 last season, and the total surface area involved was 6,505 hectares, as compared with 5,729 the preceding season.

The following table, No. 1, is self-explanatory:

Arrondissement of	*Number of Kilograms of Flowers Obtained*					
	Red Roses		*White Roses*		*Totals*	
	In 1930	*In 1931*	*In 1930*	*In 1931*	*In 1930*	*In 1931*
Karlovo.....	4,052,119	3,547,507	650,368	485,734	4,702,487	4,033,241
Kazanlick.....	800,130	1,033,314	566,415	716,434	1,366,545	1,749,748
Brezovo.....	911,620	649,602	279,000	194,249	1,190,620	843,851
Stara-Zagora....	118,857	102,346	5,822	8,434	124,679	110,780
Plovdiv.....		90,103		2,003	39,200	92,106
Totals.....	5,882,726	5,422,872	1,501,606	1,406,854	7,423 531	6,829,726

Taking into consideration the fact that this year the surface area planted reached 6,505 hectares, the yield on the average was 1,049 kilograms of flowers per hectare, as compared with 1,136 kilograms per hectare in 1930 and 1,243 kilograms in 1929, showing that the crop this year went appreciably below that of two seasons ago.

The flowers gathered this year were treated almost exclusively by the large distillers and by the cooperatives. There still exist a number of small distillers, but they are growing less each year. Flowers this season were treated almost altogether in alambics over open fire and steam stills.

It should be remarked here that this year even less than last no flowers were treated by means of volatile solvents, meaning that no concretes were manufactured this year in Bulgaria. Five distillers with factories in the arrondissement of Karlovo possess equipment to the amount of thirty-five for the production of concretes. This year only the equipment of one industrial, Mr. Garnier, did any work, and this latter thought that he had found something to make it possible for him to adapt the concrete manufacturing equipment for use in extraction by means of distillation.

Another fact of importance that must be signalled for this year is the preponderant part taken by the cooperatives. Due to the conditions existing in the region, and which will be explained further on, only 20 distillers in the Karlovo district treated roses this year, as compared with 31 last season. These distillers treated 2,629,343 kilograms of flowers this year as compared with 3,880,000 in 1930. On the other hand, the cooperatives in the same region numbered 17

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instead of 11 last year, and they distilled 1,187,014 kilograms of roses as compared with 565,414 kilograms last season. In the arrondissement of Kazanlick private distillers, with the exception of one, remained the same, but they treated only 732,713 kilograms of flowers as compared with 1,014,403 during the preceding season. The cooperatives on the other hand, numbering 10, instead of 8 in 1930, distilled 624,373 kilograms of roses in place of 351,278 kilograms in 1930, or about double the amount. In the arrondissement of Brezovo the private distillers treated 562,354 kilograms of flowers as against 901,239 kilograms in 1930, and the six cooperative distilleries in the same region treated 315,137 kilograms of roses instead of 289,228 kilograms the preceding year.

Last year all of the flowers in the arrondissement of Stara-Zagora were treated by the cooperatives, and all of those of the Plovdiv arrondissement by the private distilleries. This year in the same regions the flowers were divided for distillation between the privately owned distilleries and cooperatives. The amount of roses in kilograms distilled by privately owned distilleries this season was 4,021,699 and 2,272,039 kilograms by the cooperatives. Taken as a whole, all of the flowers treated in the country during this season, or 6,293,738 kilograms, resulted in a production of 1,774 kilograms, 454 grams of Bulgarian rose oil, as against 1,998 kilograms in 1930 This stock of oil is divided as follows: 1,183 kilograms, 278 grams to the privately owned distilleries and 591 kilograms, 176 grams to the cooperatives.

This year the question of the price of the roses became a very delicate problem to handle, and it may be said that even up to the present time the whole question has not been entirely answered or cleared up. The trade knows, of course, that due to the general world crisis, but particularly the crisis as applied to the perfume business, stocks were held over from the previous seasons. Many of the large manufacturing perfumers, feeling the general slow-up stopped buying, drawing upon their reserves. For this reason one saw the decided lowering of prices paid for flowers in the Grasse region of Southern France. Therefore, knowing the general state of the market, the Bulgarian distillers were very much on their guard this season. During the usual reunions between distillers and growers this year, the former offered no definite propositions of any kind, because of the economic situation existing throughout the world. In fact, a certain number of the distillers stated openly that they would not distill any flowers this year, refusing to engage themselves for any of the yield. This situation existed when the flowers began to bloom for gathering time, and no decision had been taken as to price when this period arrived.

The Bulgarian government saw the peril involved, and decided, through the Banque Agricole de Bulgarie, to grant credits to the cooperatives, and thus treat the roses and not compromise the yield. In this way the State not only saved this season's yield, but kept a national culture from running the chances of being ruined. After all, the rose oil industry represents one of Bulgaria's greatest sources of revenue, for the reason that Bulgaria is an agricultural country. Furthermore, it must be borne in mind that the Valley of Roses is an extremely fertile region, permitting the peasants to grow other cultures there. For this very reason everything was done this year to keep the discouraged growers from pulling out and destroying their plantations of rose trees.

Seeing the cooperatives in operation, after a period of eight to ten days, the independent distillers also decided to purchase flowers and treat them. Some of them proposed the price of 7 leva per kilogram for the red rose, as against 22 leava in 1930, but even today no one knows actually just what the prices were they paid. As for the cooperatives, when the oils produced by them have been placed, the growers will receive their share depending upon the price received for the product. The oils of the cooperatives are produced under the control of the State, of course, and are sealed with the guarantee of the State.

Naturally, with the low prices paid for roses this year, the price of Bulgarian rose oil has dropped. On the open market today in Bulgaria the good oils are quoted at 60,000 to 75,000 leva per kilogram, or $430 to $535.

The following table gives the exports of Bulgarian oil since 1926:

Years	*Weight of Oils*	*Value of the Oils in Dollars*
1926.....	3,012 kg. 273 gr.	975,852
1927.....	2,474 kg. 661 gr.	1,246,232
1928.....	3,253 kg. 238 gr.	1,216,425
1929.....	2,598 kg. 652 gr.	934,767
1930.....	1,750 kg. 815 gr.	985,598

Of the foregoing, America took 250 kilograms .052 grams, valued at 19,622,140 leva.

Export figures for 1931 are as follows through June:

January.....	81 kg. 735 gr.	6,538,800 leva
February.....	52 kg. 410 gr.	4,192,800 leva
March.....	44 kg. 900 gr.	3,592,000 leva
April.....	8 kg. 410 gr.	504,600 leva
May.....	83 kg. 380 gr.	5,002,800 leva
June.....	267 kg. 954 gr.	16,077,240 leva
	538 kg. 789 gr.	35,908,240 leva or $258,332

Letters To The Editor

Editor, Drug Markets,

Sir:

We have been reading your July issue with great interest and note that the U. S. P. XI is being prepared at the present time.

In this connection it might interest your readers to know that a regulation has become effective in Germany which definitely substitutes Strophanthus Gratus seed and Sthrophanthin obtained from this seed for any similar product. In other words, Strophanthus Kombe and Strophanthus Hispidus, the two varieties of the U. S. P., have been found so dangerous and generally unsatisfactory, that their use is no longer permitted in Germany.

I believe that this will be of interest to a number of your readers.

M. T.

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A Discussion of Bundling

By Francis Chilson

The Whys and Wherefores of bundling for dozen packages is explained by Mr. Chilson in this article of extreme interest to the production manager.

THE great majority of pharmaceutical and cosmetic products are packed, sold and delivered through the various agencies of distribution to the retailer in units of dozens. In some cases the packing will be limited, because of the weight of the individual package, to six packages; and in others, as in the case of nationally advertised products, whose volume is so great that the average retailer will carry at least a half gross and perhaps several gross, the packing may be increased to one-half or one full gross,—in which case there is no intermediate packing,—the packages being placed directly into the fibre or corrugated shipping case. Often, however, even in the latter instance, convenience to the wholesaler and to the retailer may dictate that the packages be grouped in units of twelve anyway—tooth paste and shaving cream being good examples of this.

These intermediate packages may take the form of chipboard boxes, printed or plain; corrugated boxes with or without egg-nests or partitions, lithographed display boxes; and bundles with printed or plain wrappers. Chip-board as a general rule is purchased already set up, and, when used in large quantities, requires an enormous amount of storage space in the warehouse and also an unusual amount of floor space at the casing tables at the end of the packaging line, where floor space usually is at a premium. Similarly, fibreboard and corrugated unit cases require a considerable amount of floor space, but not so much as chip-board, for the reason that the shells, inners and nests are collapsible. Display cartons and boxes as a rule are collapsible and require less storage space than either of the preceding classes. Wrappers, obviously require the least space of all.

In planning production each of these classes of intermediate or unit packing presents its own peculiar problem, and, as a consequence, have a direct bearing upon the amount of working capital invested in inventory. Plain chip-board, when used daily in very large quantities, can be scheduled so that the box maker will make daily deliveries of the scheduled amount. This saves storage space but is obviously applicable in comparatively few cases. Chipboard may, moreover, be obtained from local suppliers in two or three days. Printed chipboard, that is, chipboard covered with printed or lithographed paper will require much longer and usually dictates the carrying of an adequate inventory.

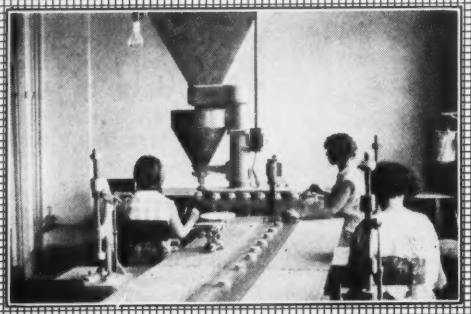
Corrugated and fibreboard deliveries may be scheduled daily if production is large enough. The maker of corrugated or fibre in this event makes up in advance and holds several weeks supply.

Display cartons must be made up in quantity, and comparatively large stocks carried on hand. On very large contracts the lithographer will make several editions of the run and pro-rate deliveries over the year.

In all of these instances, the conditions cited are ideal, but the average manufacturer generally is compelled for one reason or another to carry a considerable inventory of intermediate packages. And production men, who have in the past been called upon to meet sudden increases in demand, know how difficult it sometimes is to obtain a run of special unit packages, particularly during good times and special seasons when the suppliers themselves are extremely busy.

It is at once apparent that the unit of twelve packages wrapped in a plain wrapper is easiest to schedule, because in an emergency rolls of wrapping paper may be obtained immediately from local paper dealers. When printed wrappers are used, it is still possible to radically decrease storage space and inventory, for the reason that, even if a full six months stock is carried, the amount invested in inventory and in floor space will be relatively insignificant because of the cheapness of paper and its compactness. But such a stock is not essential as printed wrappers may always be obtained in three or four weeks or even less.

Consider Your Packaging



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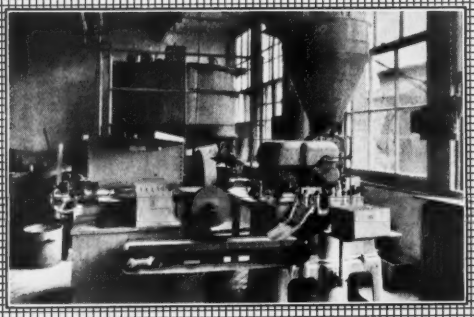

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One of the reasons why manufacturers, with volume large enough to employ more efficient and less costly methods, have hesitated to abandon the traditional unit package lies in a persistent belief in its display value, coupled with a conviction that nothing else will give sufficient protection. It is evident at the outset that chip, fibre and corrugated board have little or no display value. They serve only as intermediate containers and are discarded either by the wholesaler or by the retailer. This is often true, unfortunately, of lithographed display boxes also. The increasing use of open display methods of retailing and the sharp competition among manufacturers for display space have impaired the advantages that display containers once enjoyed. This was strikingly brought out during the recent Packing Conference, and emphasized still further by a survey made by a contemporary publication. In these investigations it has been discovered that if the individual package is extremely small, such as a bottle of Mercurochrome, the chances of its being retained in the original display box are excellent. If the package is of average size—like toothpaste and shaving cream—retailers will remove it from the display box and place it on an open stand where it may be seen and handled by prospective purchasers.

In order to decrease the cost of the intermediate or unit package and the labor of filling it; in order to decrease floor space and the amount invested in packing material inventories, while, at the same time increasing the flexibility of production schedules, manufacturers of large-scale products have recently been giving the question of machine bundling considerable study. Those who have adopted it have been entirely satisfied with results as figures quoted hereinafter show.

The bundling machine forms a package of six or twelve oblong packages like toothpaste, and then wraps and seals the ends of the bundle. When the first bundling machines were introduced, it was necessary to have three special feed conveyors in order to form a bundle of four rows of three packages each. This arrangement was somewhat cumbersome, and the machinery manufacturers then developed an external assembling device, which assembles the bundles as the packages come down the conveyor in single file from the cartoning machine. This is the standard arrangement of all bundling machines today. The bundles automatically forms wraps and seals the ends of the bundle and delivers it to the casing table or shipping case sealer as required.

The Norwich Pharmacal Company, which had been using a lithographed display carton for Unguentine, has reported a saving per thousand bundles of $14.25 in materials alone. Bristol Myers using a less expensive carton reported a saving per thousand bundles of $7.63.

The cost of wrapping material including end seals (the whole bundle being printed in two colors), ranges from $2.50 to $2.80 per thousand bundles. The cheapest of intermediate packaging materials—chip-board, corrugated etc. will range on the same quantity basis from $3.75 up.

In addition to the figures cited, Bristol Myers reported a saving in labor amounting to the wages of three operators who were displaced by the machine. It was not possible to obtain from these companies other savings such as warehousing space, decreased inventory of packing materials, outgoing freight, etc. The freight saving of these companies in the course of a year must be considerable. The Bristol Myers Company reported a saving in weight over the old packing of two pounds per gross and Norwich four pounds.

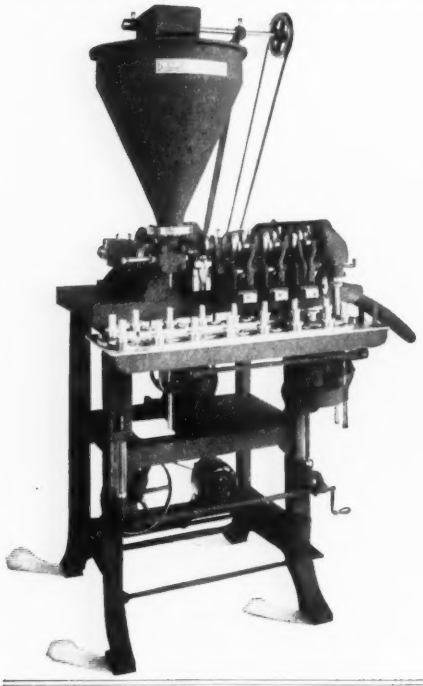
One of the theoretical disadvantages of bundling is that the wrapper does not protect the package as well as other forms of packing material. This is true. But since all dozen-unit packages are repacked into corrugated, fibre or wooden shipping cases, there is no real necessity for heavy protective packing. Proprietary medicines and other liquid products usually are protected by a piece of corrugated inserted into the individual carton. The question of security is answered by the fact that Sal-Hepatica, packed in a heavy glass bottle, is merchandised in bundles, and is further emphasized by the experience of the Bristol Myers Company, which states that damage complaints from bundles are not more numerous than they were when heavier intermediate packing was used. In any case, intermediate packing is never used for shipping purposes. A wholesaler, receiving an order from a drug store for a dozen packages of a given item, will invariably repack the unit package again. For many products parcel post regulations would compel this.

The question of display has already been discussed. In passing the writer wishes to emphasize that unit or intermediate packing of any kind—with the exception of lithographed display boxes—are never used for display purposes. Yet, bundles of Ipana and Squibb tooth paste are frequently seen in drug store windows. One of the tenets of modern retailing is that display space shall be allocated first to products that are well known or widely advertised and then to those that are new. If any space is left it will be devoted to the display of other products.

Another disadvantage sometimes, though rarely, cited is that wholesalers, who do an individual package business, dislike the bundle for the reason that, once broken, it is useless as a stock package. This seems to be answered by the fact, that since bundling can only be economically applied to large scale handling (which implies mass distribution), the number of times a wholesaler would be required to break a bundle of a dozen fast selling packages are in the main quite limited. On the other hand, retailers find that the bundle is convenient for the reason that the wrapper can be disposed of more easily than the bulky materials of other forms of intermediate packing.

(Continued on page 299)

Save and Be Safe
With the *Kiefer Clipless Closure*



Clips are no longer necessary. That fact is recognized and admitted since the introduction of the Kiefer Clipless Closure.

No clip troubles!

No clip expense!

The Kiefer Clipless Closure (patented) seals your tubes with a *tight* handsome closure. Compare it with any other closure. The Kiefer closure will hold. It can be used with confidence.

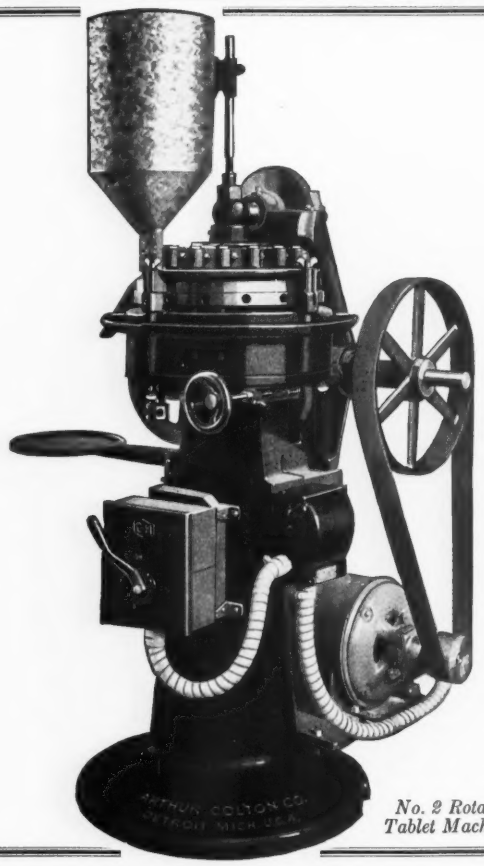
Longer Tubes are Not Needed for the Kiefer Clipless Closure

Remember this when you decide to save thousands of dollars by eliminating clips. Don't offset that saving by using a closure that requires longer tubes.

The Kiefer Tube Filler and Closer uses our "Impacta" method of filling (patented). Fills your tubes solidly, free from air bubbles, cleanly. No wiping of tubes.

Write for sample tube and full information

The Karl Kiefer Machine Company
Cincinnati, Ohio



No. 2 Rotary Tablet Machine

New and Improved!

We have no yearly models—but improvements and refinements are being constantly added to Colton machines.

There are over five hundred Colton Rotaries in use.

Superior design, sturdy construction and ease in operation have made this possible.

The No. 2 Rotary Tablet Machine has such desirable features as *positive pressure*, eliminating varying thicknesses of tablets; *hardened steel gear drive*, eliminating frequent replacement of worms used on other makes, and *sliding upper punch holders*, to hold the punches rigidly, enabling the manufacture of special shaped tablets most satisfactorily.

Write for Catalogs.

ARTHUR COLTON COMPANY

2620 East Jefferson Ave.
Detroit, Michigan

For Plant Managers

By Francis Chilson

Metal Labels and Labeling

It will be of great interest to those who have always regarded metal labels as being too costly for moderate priced products, to learn that improvements in manufacture have brought the price down to a point which permits the manufacturers of these labels to compete with labels made of other materials. Also, the development of a machine to hold the labels in place until they set has made it possible to apply metal labels on a production basis. This machine (mentioned before in the Plant Managers Department) has been in successful service at the Hudnut Plant for some time. The name of the manufacturer of the machine will be given to those interested on request.

Hand Labeling

Mr. Carl Peehl, factory manager of the Marinello Company, differes with us on the use of smooth hardwood boards and other smooth surfaced materials for hand labelling blocks. Mr. Peehl prefers soft wood because it soaks up the paste and thus inhibits drying out.

We agree, that if the paste is one which drys out very rapidly, soft boards are best. It all depends upon the paste used. Our preference is for the smooth surface and a relatively slow drying paste, for the reason that it is possible to work with a thinner film of paste on the labels; and also because the labels can be handled easier as they do not cling so much to the block. However, this should be a matter of preference governed by labeling conditions and the paste used.

Notes On Temperatures

Since most of the men who have to do with the compounding of batches are not graduate chemists, there is considerable difference in their interpretation of the same process terms. For this reason the same formula given to two different men to make will often result in slightly different products—and often this difference, as in the case of lipsticks, is sufficient to injure the product. The writer is of the opinion that heat control devices and even thermometers are not used frequently enough—the latter especially during the various stages of manufacture. In making ointments for example the term "melt" is taken to mean that all waxes, greases etc are to be thrown into tanks and melted indiscriminately without regard to individual melting points. As a result some of the ingredients are often heated too much. It often happens, moreover, that the batch maker throws in the material that requires melting and then goes off to do some other work while the melting is going on. The writer has seen material in melting tanks actually boiling while the batch maker was away from the melting room. About the only temperatures that are usually read with care, are those taken at the time perfume or delicate medicaments are added, and also those at the time of filling.

In the compounding of every batch that requires heat a good thermometer is an indispensable tool, and the entire process should be carefully standardized, step by step, with the readings indicated for each step. We believe that chemist's specifications should be more detailed and specific than they usually are. Instead of saying "gentle heat" they should say "heat to 35° C.

The common terms usually employed in manufacturing have been officially standardized as follows:

Gentle Heat	30 to 40°C.
Moderate Heat	45 to 50°C.
Cold Water	15 to 20°C.
Lukewarm Water	35 to 40°C.
Warm Water	60 to 70°C.
Hot Water	85 to 95°C.

Heat control devices should be employed wherever volume warrants investment in them. They are much more dependable than human memory. Their effective operation, however, depends upon frequent callibration; and a variation of one or two degrees must be allowed. In the food industries, particularly in the making of marmalades and jams, the question of heat control is so important that a one degree variation is not permissible. Special thermometers with tenth of a degree readings are made and one man is delegated to watch temperatures—and nothing else. Such rigid control in this industry is probably not necessary but there is little doubt that many of the variations in different batches of the same product may be traced to lack of progressive temperature control and lack of rigidly standardized procedure.

And Speaking of The Big Fellows

We know of one who prides himself on his plant methods—whose face powder sifting is carried out by a man standing next to the sifter, filling it from time to time with a hand scoop! This is one of numerous cases that we could quote—all of which goes to show that the large plant, despite its opportunities, is not always most efficient. Indeed, many of them are strikingly inefficient.

Clear and Crystal Clear

Many manufacturers are contented with their present method of filtering and filtering equipment, provided that a reasonably clear product is delivered. Very rarely do they go a step further and experiment with filtering with the object of producing a *crystal clear* product. There can be no doubt that a brilliant, sparkling liquid has more appeal than one which is merely free from impurities and hence apparently clear. This was demonstrated to me the other day in a plant using the new Alsop Disc Filter. A face lotion that had been previously filtered in old equipment was run through the Disc Filter and the resulting lotion was so brilliant that it was difficult to realize that it was the same product. There was a time when filtering, even of the crudest kind, was the bane of every factory man's existence; but new developments both in equipment and media have brightened the production man's job as well as the liquids themselves.

Silicate of Soda in Aluminum Tubes

The Philadelphia Quartz Company, manufacturers of Silicate of Soda has sent us a letter pointing out in connection with

Some well-known concerns . . .

E. R. Squibb & Sons
Bristol-Myers Co.
Pond's Extract Co.
Colgate-Palmolive-Peet
Norwich Pharmacal Co.
Forhan Company
Ex-Lax Mfg. Company
Kolynos Company
Northam Warren Co.
Chesebrough Mfg. Co.

that have replaced expensive packing methods with . . .

MACHINE BUNDLING

Packing costs are drastically reduced by machine-bundling. In most cases *material costs* are cut in half—inexpensive bundling paper replaces costly boxes. *Labor costs* are reduced—one bundling machine and one operator take care of the output of 2 cartoning machines. *Freight costs* are lowered—bundles weigh so much less than boxes.

Will machine-bundling fill your requirements and save you money? We will be glad to answer this question for you—get in touch with our nearest office.

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts
New York Chicago Los Angeles
London: Baker Perkins, Ltd.

PACKAGE MACHINERY COMPANY
Over 150 Million Packages per day are wrapped on our Machines

AN ADHESIVE FOR EVERY MACHINE OR HAND OPERATION

WHICH SHALL IT BE?

The cheapest or the best? A little work with a sharp pencil will prove that

MIKAH
ADHESIVES

are the best and most economical. The first cost is of no real consequence.

Designed for the job
Carefully made
Accurately standardized
Uniformly dependable

they work unfailingly, week in, week out, maintaining production schedules and eliminating costly delays.

NATIONAL ADHESIVES CORPORATION

Home Office—820 Greenwich St., New York

1940 Carroll Ave., Chicago — 883 Bryant St., San Francisco
15 Elkins St., Boston — 1305 Germantown Ave., Philadelphia

WORLD'S LARGEST PRODUCER OF ADHESIVES

Sales Offices in all principal cities

our recent article on shaving cream that one drop of a very silicious silicate will inhibit corrosion in aluminum tubes used for shaving soap or any other alkaline product. Experiments made to prove this are described in Silicate P's & Q's, a publication of that company, copies of which may be obtained from the company on request—together with samples of Silicate of Soda for trial.

An Economist Goes Cuckoo

John Doe, cogitating upon the depression, spat into the gutter, thereby contributing work for unemployed street cleaners. Unknown to him, however, his sputum contained tubercular bacilli, which were in time inhaled by Richard Roe. In due course Richard Roe became ill and lost his job, providing work for one of the five—or is it ten million ? He went to a doctor who diagnosed his ailment as gall bladder and operated on him for floating kidneys, thus relieving the doctor's depression by one thousand dollars—and that of two nurses by $48.50. In time he went to a sanatorium and hence provided work for foot loose sanatorium employees, doctors, etc. Eventually Richard Roe died and provided work for the undertakers, florists and grave diggers.

And the *moratorium* of this tale is that if you expect-to-rate as human benefactors, expectorate in the gutter.

A Factory Managers Association

In discussing the possibilities of such an association with a well-known member of the trade, we elicited a very curious reaction. This man's reaction was, that since his firm was so large, it could afford to be independent as every new development either equipment or materials was inevitably brought to him first. This is no doubt true. But our contention is that the men whose lives are devoted to production know more about its practical problems than outsiders and hence are better able to aid each other. Manufacturing problems originate in factories—not in supply or equipment houses. Often, it is true—very often indeed—these problems are solved by the research or engineering departments of the supply and equipment houses. Without their aid the industry would make little progress. But when a problem has been solved, the supplier who solved it promulgates the news as a natural and ethical aid to the development of his business. In this indirect way the "big fellows", whose business is constantly solicited, are kept informed of new developments. But these instances, despite their number, are comparatively few in the aggregate of production problems upon which everyone, large and small, needs the constructive influence and assistance of practical minds. And there are, moreover, a multitude of production problems, which the suppliers and equipment people steer clear of for the reason that they cannot afford to spend money in solving problems that offer no possibility of adequate uture exploitation. For example, a manufacturer may have a special filling problem which is being carried out by hand for the want of a machine to do it. If he wishes to spend a considerable sum of money he may have a special machine built. But, on the other hand, if the equipment maker sees a market for that particular machine, he will build and sell the first one for a fraction of its development cost—depending upon future sales in the industry to recompense him. This is as it should be.

On the other hand if the problem is one which occurs infrequently, it will not interest equipment people unless they've seen it solved before, and the manufacturer is compelled to resort to a home-made makeshift. Right here is a problem on which the advice of other production men who may have solved it already could be of invaluable aid. And, if an association of factory managers were in existence, suppliers and equipment makers would welcome it as a clearing house for all the developments which now are first made known to the larger houses. Other industries—the confectionery for instance—have found that Plant Managers associations are immensely beneficial to everyone large or small.

New Pamphlets and Catalogues

Pneumatic Scale Corporation, Ltd. has sent us a pamphlet describing in detail the operation of the Standard single and six head rotary screw cappers, equipped with their newly developed supersensitive capping head. This head, because it releases at the proper time, makes its possible to apply plastic caps without any fear of breakage due to variations in the thread rings of glass containers.

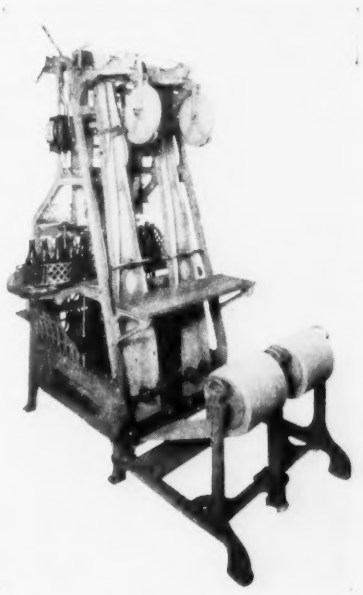
From Special Production Machines, a division of Pneumatic Scale, comes a pamphlet reminding us that no operation regardless of how difficult need ever be done by hand if its volume warrants the development of a special machine.

Stokes and Smith has mailed us an attractive pamphlet describing the improved American powder filler for face powders, talcum, batch salts and kindred dry products. One of the interesting features of this machine is that accessories can be provided to permit either volumetric, weighed or packed filling as desired.

John Silver of F. J. Stokes Machine Co. wrote us about his forthcoming trip to Europe. Evidently he was so eager to be off that he forgot to sign his letter. But we don't blame him. If we were headed for England, Germany and Switzerland on business and also on pleasure we wouldn't even pause long enough to write a letter. John is going to call on the Lord Mayor of Liverpool, Edwin Thompson, who has represented Stokes in the British Isles for a quarter of a century. Shouldn't be surprised if John hires Ramsay MacDonald before he returns—the British premier will be looking for a job shortly.

Bottle Wrapping Machine

Edward Ermold Co., New York, is offering the new "Resina Automatic Bottle Wrapping Machine", manufactured by S. M. Resina Manufacturing Co., New York. This is said to be the first successful machine which automatically makes a corrugated paper wrapper from



a roll and then places this wrapper accurately upon the bottle without breakage to wrapper or container and without disturbing the label. It is further claimed that the wrappers are made by the machine at two and a half times less in cost than the carload price of the factory made paper; that it wraps from 60 to 80 bottles per minute; and that there is a considerable saving in packing space.

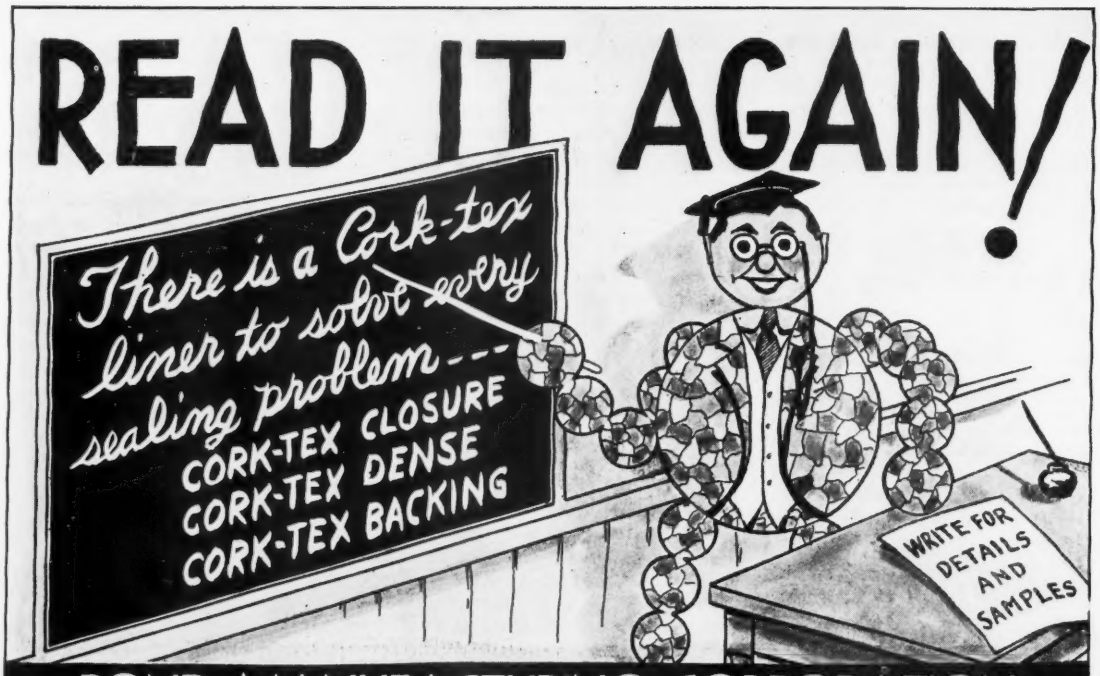
Filler Machine Building

Filler Machine Co., Philadelphia, is erecting a two-story brick and concrete addition, 48 by 70 feet, to its plant in that city.

Robert Gair Fellowship

Robert Gair Co., New York, has established a fellowship at the Mellon Institute, Pittsburgh, for research on moisture-proofing nad grease-proofing paperboards used in cartons and boxes. Dr. Marion D. Coulter, Fellow of the Institute 1925-30 for study of cellulose technology, has been appointed.

READ IT AGAIN!


There is a Cork-tex liner to solve every sealing problem---
CORK-TEX CLOSURE
CORK-TEX DENSE
CORK-TEX BACKING
WRITE FOR DETAILS AND SAMPLES

BOND MANUFACTURING CORPORATION
WILMINGTON, DELAWARE

LIGHTNIN PORTABLE MIXERS

Fully Patented

Protect the
QUALITY
of
Your Product

THE terrific pressure of competition becomes dangerous when you permit any variation to occur in the uniform quality of your product. That is why LIGHTNIN mixers become daily more important to you and to your field. The "double action" illustrated here is the reason for LIGHTNIN thoroughness; LIGHTNIN speed; LIGHTNIN economy in time and labor saving. And there is a LIGHTNIN with just the size . . . power . . . and capacity you require.

MIXING EQUIPMENT CO., Inc.
Originators and Largest Manufacturers of Portable Electric Mixers
1060 Garson Ave. Rochester, New York
229 EAST 38th STREET NEW YORK CITY

"FILMASEAL"
Trade Mark Reg. Patents Pending

Airtight . . .
Leakproof . .
Tamperproof .

A transparent film sealed to top of container
Plus our continuous thread screw cap
Film must be removed to reach contents
Used with standard C. T. bottles and jars
Automatic application . . . no decrease in output
Adapted to large scale production
One of our films will serve your purpose

FERDINAND GUTMANN & CO.
Bush Terminal No. 19 · Brooklyn, N. Y.
SANISEAL METAL MILK CAPS . . . DISTILLED WATER CAPS
CROWN CORKS
CONTINUOUS THREAD CAPS . . . SPECIAL PURPOSE CAPS
Closure Specialists Since 1890

News

People

Durrett Joins Squibb

Again succeeded by Dr. F. J. Cullen, as Chief of Drug Control, Food & Drug Administration, Dr. James J. Durrett has resigned that position for the second time since his institution in that office in May 1928 at which time he succeeded Dr. George W. Hoover. When in April 1930 Dr. Durrett resigned to become chief health officer of the State of Alabama, Dr. Cullen occupied the office of Chief of Drug Control for only about a month since Dr. Durrett expressed his desire to return. This time, however, Dr. Durrett has become associated with E. R. Squibb

Dr. J. J. Durrett
"Glorified Office Boy"

& Co., and has an office on the twenty-fifth floor of the Squibb Building, which floor is reserved for the main executives (Palmer, Weickers senior and junior, Anderson, Keim, and few others.)

Despite his nice office and important location in the Squibb Building, Dr. Durrett is very vague about the work he is to do for Squibb, smilingly saying that he is a "glorified office boy"; will do whatever work is placed upon his desk; is always glad to work hard and is pleased that the Squibb executives are also hard workers. Doubtless Dr. Durrett's work will be both of an advisory and contact manner. He expects there will be plenty to do.

Coming from Washington on Monday August 31 to start work with Squibb September 1, Dr. Durrett was so busy in Washington that he made no arrangements for living quarters and stopped at the Hotel St. George, Brooklyn, to be near the manufacturing laboratories of Squibb. Upon finding that such a location was unnecessary, he and Mrs. Durrett moved to a midtown New York Hotel until such time as they can arrange for a permanent location.

Surprising enough Dr. Durrett has been building a house in Maryland close to Washington, D. C., which house is completed except for the heating plant. When questioned about the house Dr. Durrett explained that he does not play golf; does not play poker or shoot crap successfully, so to occupy his spare time in Washington he played architect and chief laborer to build a house that was, and still is, just what he and Mrs. Durrett want.

Director of Regulatory Work Walter G. Campbell states his regret in losing Durrett, but no one at the Department gives any other reason for Durrett's departure other than his chance to obtain an excellent commercial position that will pay him many times what the Government could afford to pay. While Dr. Durrett's departure was somewhat of a surprise, it is stated that he mentioned to some department officials three months before, the fact that such a thing was probable. It is now recalled that three major officials of Squibb—Palmer, Weicker and Anderson sat in at the meeting of the Proprietary Association in New York last May and listened to Dr. Durrett's conduct of the "question box", leaving after Dr. Durrett's talk, at which time Dr. Durrett also left.

O'Shaughnessy Quits Alcohol

Long looked on as one of the leading minds in the alcohol industry, rising to the height of his prominence in the industry as president of the Rossville Commercial Alcohol Corp., the American Solvents & Chemical Corp., and the Industrial Alcohol Institute, quietly, without publicity of any kind, did Victor M. O'Shaughnessy recently resign as president of American Solvents & Chemical Corp.—the only office in the industry he still held—remain a director and "practically retire" from all connection with the industry in which he was originally engaged in his home town of Lawrenceburg, Ind.

The man whose signature as secretary of the original Rossville Co. appeared on the guarantees that Rossville gave of 100 per cent grain alcohol, and whose signature later and now appears (without stating his authority) on the same guarantees used by the Rossville Commercial Alcohol Corp. as a separate unit and as a division of the American Solvents & Chemical Corp., was said by his friends to have known thoroughly every phase of the alcohol business; was said to have experimented in the days of the original Rossville Co. with various crops as raw material for alcohol manufacture; had data giving the cost of alcohol from each of the various crops.

Receiving stock for the Rossville Co. in the merger in January 1929 including also Federal Products Co., Seaboard Chemical Co., and Industrial Chemical Co., Mr. O'Shaughnessy became president of the Rossville Commercial Acohol Corp. In July 1930 the Rossville group joined forces with the American Solvents & Chemical Corp., and the General Industrial Alcohol Co., the American Solvents being the parent company and all stock becoming an issue of that company. The

Victor M. O'Shaughnessy

stock of Rossville Commercial Alcohol Corp., which started off at about $50 per share, is today worth about $1 per share, in fact reached a low of 75 cents per share as stock of the American Solvents & Chemical Corp.

Anderson Leaves United Chem.

Percy E. Anderson, well-known figure in the drug trade, has resigned his position as vice-president and New York manager, United Chemical & Drug Corp., Bridgeport, Conn., and has been succeeded by S. Baum, formerly of McKesson & Robbins, Inc., and more recently one of the sales staff of United Chemical.

United Chemical & Drug Corp. was organized last February with authorized capital of $600,000, to deal in fine chemicals, essential oils and botanical drugs. At that time it bought the business and stocks of King & Howe, Inc., Irving Feinberg, secretary-treasurer of Ramses, Inc., a previously existing corporation now a United Chemical subsidiary, is president and treasurer of United Chemical & Drug Corp.

Baketel Abroad

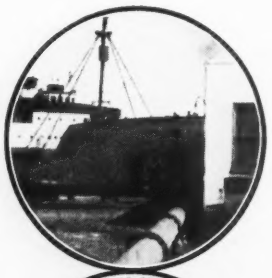
Reed & Carnrick's President, Dr. H. Sheridan Baketel, sailed for England September 9 to spend about two months in England and France in the interests of the company's foreign trade.

Charles Wesley Dunn Jr.

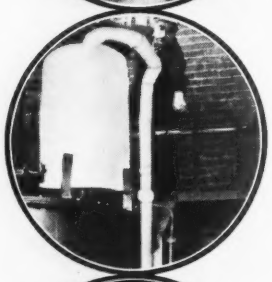
Charles Wesley Dunn, Counsel of the American Pharmaceutical Manufacturers' Association, is the father of Charles Wesley Dunn Jr., born August 4.

• DIVISION OF U. S. INDUSTRIAL ALCOHOL CO. •

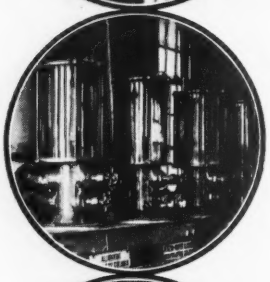
Four company-owned steamers deliver raw material direct to plant.



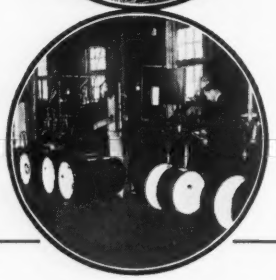
Special distillation process calling for absolute accuracy in control.



Tail box assembly in the anhydrous alcohol plant.



Filling room for drum shipments of solvent chemicals.



ANHYDROUS ALCOHOL

(Pure and Denatured Ethyl Alcohol)

(C_2H_5OH—99.8-100%)

SPECIFICATIONS

Color & Properties:
Clear, water-white liquid, characteristic odor

Constants:* *(for pure alcohol)*
Specific gravity: Not more than 0.7940 at 60/60°F.
Weight per Gallon: 6.62 pounds
Acidity: Free acid as acetic, not over 0.02%
Boiling Point: 78.4°C.

**Constants for Denatured Anhydrous Alcohol will naturally vary with the quantity and character of the denaturants but will approximate the above.*

Solubility:
Miscible with water without turbidity

Dryness:
When 10cc. of the alcohol is shaken in a stoppered tube with 0.5 gm. anhydrous copper sulphate, the latter does not turn blue

Derivation:
Removal of water from ordinary 95% alcohol by a continuous process

Method of Purification:
Distillation

Grades:
Pure and Denatured (all formulae)

Containers:
Tank cars, 50-, 10-and 5-gallon steel or tin-lined drums, ½-litre bottles—36 to the case

Fire Hazards:
Alcohol is inflammable, having a flash point below 80° F. Precautions should be taken to keep flames away from its vapors

ANHYDROUS Alcohol, because of its total freedom from water content, is a valuable adjunct in the preparation of many pharmaceutical formulae where the presence of moisture is undesirable.

A patented and exclusive process of continuous distillation developed in the U. S. I. C. laboratories permits production of a practically pure anhydrous alcohol in any commercial quantity. Because of the affinity standard ethyl alcohol has for water it is not possible to produce anhydrous alcohol by ordinary direct distillation. Standard alcohol is 95% spirits by volume and 5% water. This water content is removed by chemical or physical means to produce anhydrous alcohol. Before development of the continuous distillation process, anhydrous alcohol was prepared by dehydrating standard alcohol with quicklime . . . a wasteful and tedious method.

May we send quotations? U. S. Industrial Chemical Co., Inc., 60 East 42nd Street, New York, N. Y. Branches in all principal cities.

U.S. INDUSTRIAL CHEMICAL CO., INC.

WORLD'S OLDEST AND LARGEST MANUFACTURER OF ALCOHOL CHEMICALS

Ethyl Phthalate. Butyl Phthalate. Nitrocellulose Solutions

Amyl Acetate. Butyl Acetate. Ethyl Acetate. Ethyl Chloro Carbonate. Ether

U.S. INDUSTRIAL CHEMICAL CO. INC. REG. U.S. PAT. OFF.

• DIVISION OF U. S. INDUSTRIAL ALCOHOL CO. •

Price Beating Quality

Edward Plaut, president, Lehn & Find, Inc., New York, returned on the S. S. "Europa", September 10, from a business trip to Europe. In a statement issued at that time he claimed that "entirely too much stress has been given

Edward Plaut

to price . . . that we are so over-emphasizing price that we may be swinging the public away from value and quality . . . believing that price and value are the same thing . . . . . and that retail pricing in the drug business has never been more chaotic; value never so flagrantly disregarded".

Profitless Industry

Carleton H. Palmer, president, E. R. Squibb & Sons, New York, in a statement on "Profitless Industry" says that "economic recovery is impossible until business is permitted to work out its own salvation . . . that no solution is possible until harassing governmental strictures

Carleton H. Palmer

are removed." He therefore suggests "a moratorium on the operations of the Sherman and Clayton laws . . . and at the same time temporarily to forget the tragedy of the Supreme Court's decision of 1911 and permit reasonable and stable prices for basic commodities."

Fontaine United Drug Ad Manager

United Drug Co., Boston, has appointed John E. Fontaine, advertising manager, succeeding H. L. Harding resigned.

Fire Chief McInnis

Famed among the nation's fire-fighters is "Smoky Jim" McInnis, captain and chief of Syosset's (L. I.) fire laddies. "Smoky Jim", otherwise known as Chief, is very proud of the record of his battalion which has never missed a fire within two miles no matter what the hour of the night. He attributes this perfect record to the system which he started when he was crowned Chief. The system is a simple

Slows Down to 50

one—the member of the battalion nearest the fire rushes to it and keeps it going until "Smoky Jim", otherwise known as Chief, and the rest of the boys get there. Certain leading citizens of the town, evidently jealous of "Smoky Jim's" record, have tried to bribe him to keep his boys away from their houses if a fire should start, but the chief has thus far scorned all such efforts to intimidate him. "Even if my own home should burn", he stated, "the boys will be on hand to help it out".

"Smoky Jim", otherwise known as Chief, has also established a perfect safety record which is due, in his opinion, to the fact that, when rushing to a fire, the boys always slow down to fifty before jumping off. The Chief is a demon for speed but the "Slow Down to Fifty Before Jumping Off" rule is strictly enforced.

The Chief spends his spare time at his desk in American Solvent's New York office as manager of chemical sales of the Eastern division.

Rawleigh Promotes Ousley

H. R. Ousley, formerly general sales manager, W. T. Rawleigh Co., Freeport, Ill., proprietaries, has been appointed vice-president in charge of sales of the company.

Newman Salesmanager Dorothy Gray

James W. Newman, who since 1926 has been connected with merchandising of the Dorothy Gray products, has been appointed sales manager of that organization.

Livingston's Golden Anniversary

Henry S. Livingston, first vice-president, secretary, and chairman of the executive committee, Schieffelin & Co., New York, manufacturing and wholesale druggist, celebrated the fiftieth anniversary of his association with that company on September 5. He entered its employ September 5, 1881, as an office boy, worked his way through various departments, and in 1906 was elected secretary and a director of the company. In that year also he became interested in Lederle Anti toxin Laboratories and in 1909 was elected a director of that company, later becoming vice-president. In August 1909, he organized the American Kitchen Products Co., which engaged in manufacturing and marketing of "Steero" bouillon cubes. Of this company, he became secretary and treasurer. Through most of his fifty years association with Schieffelin & Co., he has primarily been engaged in sales promotion of the various pharmaceuticals and specialties manufactured by that company.

Newcomb Pushes Pharmacy Week

National Pharmacy Week will be celebrated thorughout the country during the week of October 11-17. Plans have been completed by the committee under the chairmanship of Dr. Edwin L. Newcomb, secretary, National Wholesale Druggists' Association, who has succeeded the late Dr. Robert J. Ruth as the guiding spirit behind the 1931 observance.

As part of the display material available to pharmacists during Pharmacy Week, the National Wholesale Druggists' Association has prepared over 20,000 posters in the form of pharmaceutical education maps, containing the names and locations of the colleges of pharmacy throughout the country, together with pictures of their deans and the buildings and laboratories. These maps have been distributed for window display material together with lithographed National Pharmacy Week window strips.

The Federal Wholesale Druggists' Association has offered a three-foot high silver cup which will be presented for the best Pharmacy Week window display in the United States. Both national and local radio broadcasts will be given during this week on the service of pharmacy and it is expected that over 50,000 retail drug stores will cooperate in publicizing this week through window displays and other special features.

Wrench Returns from Coast

Joseph Wrench, sales manager, Industrial Chemical Sales Co., Inc., New York, has just returned from a trip to the west coast for the purpose of visiting branch sales offices of the company in connection with the sale of "Nuchar" activated carbon.

CRYSALBA

THE NEW DENTIFRICE BASE

A strong Advantage in a highly competitive market

CRYSALBA supplies selling arguments with its gentle cleansing power, its smoothness, its purity and freedom from poisonous metals or their salts.

It furnishes a defense against the increasing cost of elixir, by lowering the quantity of glycerine in the formula.

It lowers the cost of production because of its consistent uniformity in whiteness, structure and absorption.

Have your laboratory and production men check the generous sample we will send you on request.

Study these points of superiority:

1. Will not harden in tube
2. Equally satisfactory in both acid and alkaline tooth pastes
3. Tasteless, odorless—insoluble in ingredients commonly used in tooth paste manufacture
4. Low absorption of elixir
5. Uniformly white; uniform in purity; crystalline structure and absorption
6. Softer than the enamel of the teeth, yet highly effective as a polishing agent
7. About 99% will pass thru a 400-mesh screen
8. Inert, neutral and physiologically harmless
9. Contains no free lime
10. Free from arsenic, lead or other poisonous metals or their salts

THE ILIFF-BRUFF CHEMICAL COMPANY

Hoopeston, Illinois **DENTIFRICE DIVISION**

SWANN TCP Of uniform polishing power, which can be varied to your needs. Constant, uniform purity. Gives a creamy white paste of high effectiveness in acid or alkaline formulae.

PYRAN Patented. Designed to remove mucin placque without injury to enamel, dentin or gingival margins. Helps create proper mouth conditions. Equally useful in acid or alkaline pastes.

THE SWANN CORPORATION

BIRMINGHAM

NEW YORK ST. LOUIS

CINCINNATI

WORLD'S LARGEST DENTIFRICE BASE PRODUCERS

Randall Joins Burroughs Bros.

W. C. Randall, formerly New York representative, Mutual Drug Co., cooperative wholesaler, has been made general manager, Burrough Bros. Manufacturing Co., Baltimore, proprietary medicines. The Burrough company is the manufacturing division of the Mutual company and manufactures the products of the "URE Druggist" retail organization.

Howard Bradbury Succeeds Brother

Howard M. Bradbury has been appointed manager, Washington Wholesale Drug Exchange, succeeding his brother, the late W. H. Bradbury.

Penland Reelected

J. M. Penland, president, National Wholesale Druggists Association, has been reelected president, Southwestern Drug Corp., Dallas, wholesale druggists.

LaWall on Opium Committee

Professor Charles H. LaWall, dean, Philadelphia College of Pharmacy, and secretary of the revision committee, U. S. Pharmacopoeia, has been notified by the medical director of the health committee of the League of Nations of his appointment to represent the United States on the International Committee for assaying opium.

Simon Heads Amer. Plastics

George Simon, vice-president, Heyden Chemical Corp., New York, has been elected president, American Plastics Corp., recent consolidation of Erinoid Co., Karolith Corp., and Panplastics Corp., a subsidiary of Heyden Chemical.

John A. Silver to Europe

John A. Silver, advertising manager and assistant sales director, F J.. Stokes Machine Co., pharmaceutical machinery, Philadelphia, sailed on the Bremen, August 21, for a six weeks' combined business and pleasure trip to England and the Continent. His itinerary includes a conference in Liverpool with Thompson and Capper, Ltd., Stokes' English representatives. He will return the visit of Edward Thompson, Lord Mayor of Liverpool, and senior member of the firm, who recently spent some time in this country, and will also travel in Germany and France, returning to America in early October.

Barol Joins Wyeth

Alfred Barol, formerly with the Bureau of Insecticides and fungicides, has been appointed production superintendent of the laboratories of John Wyeth & Brother, Inc., Philadelphia, pharmaceuticals.

McClenaghan Joins Prophylactic

William McClenaghan, formerly sales manager, drugs and toilet goods department, Park & Tilford and Parfums Astrologique, has been appointed sales manager, Prophylactic Products Corp., New York, dentifrices.

Bomer Circles Globe

W. L. Bomer, vice-president in charge of foreign sales, Bristol-Myers Co., New York, has completed a round the world trip during which he completed arrangements for the erection of the new Drug, Inc., building at Sydney, Australia.

McCusker Heads Kip

Kip Corp., Ltd., Los Angeles, proprietaries and pharmaceuticals, has elected Leo McCusker, president. The Philip J. Meany Co., advertising agency of that city, has been appointed to direct the advertising account.

Keller on Business Ethics

D. C. Keller, president, Dow Drug Co., Cincinnati, addressed the Affiliated Better Business Bureaus at their meeting in that city the week of September 7 on the subject of "Business Ethics". He stated that business can be competitive without being vicious or unfair.

Killheffer in Europe

Dr. E. H. Killheffer, formerly president, Newport Chemical Works, Inc., Passaic, N. J., has been in Europe revising, in accordance with the new status of his company as a unit of E. I. du Pont de Nemours & Co., Inc., articles of association with foreign connections of both companies.

Claude Palmer With Magazine

Claude N. Palmer, formerly sales and advertisng manager, Scott & Bowne, has joined the advertising staff of *Pictorial Review*, New York.

Kelly Returns from Canada

Robert C. Kelly, John Powell & Co., Inc., New York, has just returned from a trip to New England and Canada.

Revillion Visits Belgian

Charles Revillon, representing Payan & Bertrand, Grasse, France, is visiting that company's American representative, Belgian Trading Co., Inc., New York.

Bennett Leaves Chiris

Irving Bennett, formerly with Antoine Chiris Co., New York, has resigned his position with that organization.

Companies

Vanilla Beans in Freeport

The Bourbon Vanilla Bean Capital of this country seems to be shifting from New York to Freeport, Ill., in the opinion of some New York importers of this and similar products. Since W. T. Rawleigh & Co., of Freeport, first entered this market in the primary centers as a means not only of supplying their own needs but also of selling in competition with their former suppliers, their importance in this market has steadily increased.

Now another Freeport manufacturer, Furst-McNess Co. is entering the market as prime factors in Bourbon vanilla beans. According to this latter company:

> "Due to a steady increasing volume in business, we have been importing for some time a large number of raw materials and essential oils, but not until recently have we decided to deal in vanilla beans in which commodity we hope to become important domestic factors.
>
> "We carry a large and well assorted stock of Bourbons, and also a small quantity of Mexicans which, due to our buying facilities in the producing and marketing centers, we are unable to sell at very competitive prices."

Perhaps, it is stated by New York importers, the prices on Bourbon vanilla beans will be established in Freeport with the New York market following along. The market for Mexican beans still seems to remain in New York hands, and there is not much likelihood of this control passing to the middle west, it is said.

Macy's Mabrand

Mabrand Products, Inc., New York, has been organized by R. H. Macy & Co., New York department store, as a wholly-owned subsidiary to take over the extensive and constantly growing manufacturing operations engaged in by this company. The new organization has been formed merely for convenience in handling the operations long engaged in by the parent organization. Drugs and toilet goods, food products, upholstering, engraving are some of the more important manufacturing operations which were turned over to the subsidiary as of August 1. The company is Macy-officered and the work carried on by the same department heads as were previously in charge.

McCormick's Sundial

McCormick & Co., Baltimore, has placed a sundial on its warehouse in that city bearing the legend "Bee Brand Products Dependable as the Sun's Rays". It is six feet in diameter, within easy view of passerby, and tells solar time when the sun is out.

SPEED...

Modern industry demands it

IN the hands of our organization your orders will be handled quickly and efficiently.

Our manufacturing facilities and resources enable us to give the service our customers must have. Our sales organization is flexible enough to assure each customer and his problems individual attention. Such co-operation is invaluable to all users of alcohol and industrial chemicals.

Alcohol (Pure and denatured all Formulae)	Acetates (*Amyl, butyl, ethyl*) Butyrates	Leather dopes Plasticisers Propionates	Special Esters Fusel Oil (*Crude and Refined*)	Gum Solutions Cotton Solutions	Ethyl Chloride (*Refrigeration and Ethylation*)

We shall be glad to send on request copies of our booklets—
Alcohol for Industrial Purposes and Standardized Chemicals

Pennsylvania Sugar Company
Franco-American Chemical Works

SALES OFFICE

95 Wall Street — **A. K. Hamilton** — New York, N. Y.

Sales representatives and warehouse stocks in principal cities

Distillery—Philadelphia, Pa. — Chemical Plant—Carlstadt, N. J.

Amer. Comm. Alcohol Moves

American Commercial Alcohol Corp., New York, has moved its general offices to the Chrysler building, 420 Lexington ave., that city.

Neuberg Incorporates

William Neuberg, Inc., New York, has been incorporated to carry on the import and export business founded by the late William Neuberg. The corporation, under the management of his son, William D. Neuberg, will continue to specialize in tartaric acid and tartrates.

California Spray Merger

California Spray-Chemical Corp. has been incorporated under the laws of Delaware to take over the business of the California Spray Chemical Co., San Francisco, insecticides. This completes negotiations first announced in our July issue. Directors of the new company include K. R. Kingsbury, R. K. Davies, G. E. Kennedy, B. W. Latcher and P. P. Matt, representing the interests of the Standard Oil Co. of California, and E. E. Luther, R. K. Vickery, Paul Sinsheimer and W. H. Volck, representing the predecessor company. E. E. Luther is president and general manager and W. H. Volck, technical director, of the new company.

Janvier Buys Orphos

Walter Janvier, Inc., distributors of "Kellogg's Tasteless Castor Oil", "Shu-Milk", etc., has purchased trademark rights and other assets of Orphos Chemical Co., "Orphos "tooth paste.

Puritan Cosmetics

Puritan Pharmaceutical Co., St. Louis, has changed its name to Puritan Cosmetics, Inc., in order to describe the nature of its products more accurately.

New Proprietary Plant

Od, Peacock, Sultan Co., St. Louis, proprietary medicines, has started construction of a new four-story and basement building which will make available about 25,000 square feet of floor space.

Rollins Moves

F. E. Rollins Co., formerly the National Remedy Co., Boston, has moved to new quarters in that city at 53 Beverly st.

Crystal's British Agent

Crystal Chemical Co., New York, has appointed McCoys, Ltd., London, to distribute the "Outdoor Girl" line of toilet preparations throughout the British Isles.

H. H. Ayer Sued by Recamier

Harriet Hubbard Ayer, Inc., New York, toilet preparations, is the defendant in a suit brought by Recamier Manufacturing Co., that city, alleging violation of trade-mark rights. The complaint alleges that the latter company is the sole owner of a trade-mark including the name, "Recamier", a crest like device, and the signature, "Harriet Hubbard Ayer" and that the defendant has been and is infringing the plaintiff's rights under the trade-mark.

McKesson Takes Over Plant

McKesson & Robbins, Inc., Bridgeport, has taken over the plant formerly occupied by the American Tube & Stamping Co. in order to increase its production facilities.

Tanna-Menthol Deals with Crown

Tanna-Menthol Co., Tulsa, Okla., has closed a contract with the Crown Drug Co., (Missouri, Kansas, and Oklahoma chain stores) requiring a minimum purchase of $30,000.

Treatine Moves

Treatine Laboratories, Inc., proprietaries, has moved its plant and offices to Dayton, Ohio.

Almay Products Recently Introduced

Items of a New Frederick Stearns Line

A new manufacturer of low-priced perfume came into the market a few months ago, and walked away with the cream of the business.

The old line companies have been sitting up nights ever since, to find out how it was done.

As a matter of fact, it's very simple. The new man had an original package, an excellent perfume, and a *real knowledge of how to merchandise them.* Without cutting corners, he was nevertheless able to cut costs. He knows business and he knows his business.

Thus equipped, why be timid?

The market is still open in many fields, for some manufacturer to step in and do big things. There are still a lot of dollars waiting to fall into the pocket of some enterprising makers of toilet preparations

As a rule we do not originate merchandising plans, but we can be of considerable help nevertheless.

Our business is perfume oils. *We make and import the ingredients. We create odors that sell goods. If you would like to talk plans and products with us, we are ready at any time.*

van Ameringen-Haebler, Inc.

Manufacturers and Importers of

Aromatic Essentials

315 FOURTH AVENUE, NEW YORK

180 North Wacker Drive, Chicago 619 Clark Avenue, St. Louis 42 Wellington Street, E., Toronto

Factory, Elizabeth, N. J.

Andrews Representing Dixor

Dixor, Paris, cosmetics, has appointed Elton B. Andrews, vice-president and manager of American sales. The company has also appointed Armstrong, Gordon & Hunter, New York advertising agency, to direct the advertising in the United States of "LaVelouty" and "Iradium".

Parento Appoints Shoemaker

Compagnie Parento, Inc., Croton, N. Y., has appointed Clayton F. Shoemaker, Jr., as sales representative for Philadelphia and vicinity.

Wyeth Chain Store Statement

John Wyeth & Brother, Inc., Philadelphia, pharmaceuticals, has officially announced that, while a substantial interest in the business has been acquired by the American Home Products Co., it has absolutely no connection and is not controlled in any way, indirectly or otherwise, by any chain store organizations but have a stock ownership very similar to that of other large pharmaceutical laboratories in this country.

New Products

WHITE VAPORUB

Vick Chemical Co., New York, is now marketing its "Vaporub" in a new white, stainless form. At present the new form is being produced only in the small size at the same price as the original amber colored ointment. The company has also announced that its advertising appropriation for the coming season will be double that of any previous year and that much of it will be spent to introduce the new, stainless product.

ELIXIR ASPIRAL

Eastern Pharmacal Co., Inc., New York, has introduced a new antipyretic and analgesic preparation, "Elixir Aspiral", attractively packaged in yellow brown carton, with dark blue band and white stripings. The label on the bottle matches the carton and the closure is a plastic cap.

ZYL

Schoomaker Laboratories, Inc., Caldwell, N. J., has introduced a new ethical product, "ZYL", a nasal ointment recommended for hay fever. The product is attractively packaged in a light green collapsible tube and carton to match and is featured by the company's patented applicator. This applicator was first introduced with "V-E-M", another ethical product manufactured by this company. It is made to screw on the top of the tube in place of the cap and to throw an application of the ointment high up into the nose. "ZYL" differs from "V-E-M" in that it contains ephedrine.

POMPEIAN HAIR MASSAGE

Pompeian Co., Elmira, has reintroduced a hair massage as part of its line. This preparation was part of the line of the Pompeian Co. of Cleveland and was discontinued in 1927 when Colgate purchased the company.

TWO NEW MERRELL ITEMS

The Wm. S. Merrell Co., Cincinnati, pharmaceuticals, has introduced two new products, one a cod liver oil concentrate tablet and the other, "Petromulsion" an emulsion of mineral oil with agar agar. This latter is offered plain and with phenolphthalein.

TRENT ANTISEPTIC

Trent Laboratories, Cleveland, has introduced a new oral antiseptic, "Trent", in a green and white sliding carton.

GESTEX

J. C. Ayer Co., Lowell, Mass., "Vita-Ray" cosmetics, has introduced a new digestant, "Gestex".

Above is the new Aspiral

Bottle Shipping Tray

Moulded Pulp Corp., Chicago, has introduced a new development in the packing of bottled goods for shipment. This is the "Tyte-Pack" bottle tray, a moulded form made from pulp, which forms nests the exact shape of the bottle. The trays are used in complimental halves thus making for easy packing.

CHEMICAL
E. C. KLIPSTEIN AND SONS CO.
MANUFACTURERS
REG. U.S. PAT. OFF.

ALUMINUM CHLORIDE ANHYDROUS

An exceptionally pure product, widely used and growing in importance. Average analysis indicates 99.5 per cent anhydrous aluminum chloride, less than 0.05 per cent iron, and other metals entirely absent or negligible. It was developed especially for use in Friedel-Crafts syntheses and other catalytic reactions. It has a uniformly high catalytic activity, and is available in graded sizes, including lumps, granules or powder, thus meeting specifically a wide range of requirements. Prompt shipment can be made in 100-pound drums or 500-pound drums, in quantities up to carloads.

A special C. P. grade, containing only a trace of iron, can also be supplied.

E. C. KLIPSTEIN & SONS CO., Inc.
CHEMICAL MANUFACTURERS
Sales Office
Empire State Bldg., New York City
Plant
South Charleston, W. Va.

ART TUBE COMPANY

IRVINGTON, N. J.

. . . salary cuts? . . .

not for our trusty tubists . . . reliable, loyal, experienced . . . working away . . . full time . . . and over-time . . . turning out the best in tubes . . . happily busy . . . and looking forward to being so . . . for a long, long time . . .

DOWNIES DELUXE

Diana Manufacturing Co., Green Bay, Wis., is marketing a new sanitary napkin, "Downies DeLuxe". The package is an unusually attractive one and seems to indicate the beginning of new trend in packaging for products of this nature.

POISON IVY BALM

E. R. Squibb & Sons, New York, is offering a new poison ivy treatment "Poison Ivy Balm Squibb" prepared according to a formula by Dr. Robert Morris. The new product is packed in collapsible tubes and is in addition to "Poison Ivy Toxol Squibb" and "Poison Oak Toxol Squibb".

Trichlorethylene

Roessler & Hasslacher Chemical Co. Inc., New York, has published a 38-page booklet on "Trichlorethylene". This is the only American work of its kind and represents practically all the information on this chemical which is now available. Physical and chemical properties, specifications, principal uses and applications are given in detail. Supplementing these data, considerable space has been devoted to the present-day methods of use and to pointing out the possibilities of its use in various processes.

Armstrong Cork Subsidiary

Armstrong Cork Co., Lancaster, Pa., has incorporated a new subsidiary, the Armstrong Cork Co. of California, capitalized at $2,000,000. Charles D. Armstrong, director and chairman of the board has resigned due to ill health, and his son, Dwight L. Armstrong, vice-president in charge of sales, has been elected a director to succeed him. H. M. Clarke, vice-president in charge of production, has also been elected a director to succeed the late W. H Larmier, former treasurer.

Offering Spanish Oils

George Silver Import Co., New York, American representative, Roure-Bertrand Fils and Justin Dupont, is now offering Spanish essential oils, particularly spike, rosemary and thyme products, as a result of the formation of a Spanish division of the French house which has engaged in production of these products.

Emulsions

Glyco Products Co., Inc., Brooklyn, has published a booklet entitled "Emulsions—How to Make Them", copies of which may be secured upon request to the company.

Mead Offices Moved

F. W. Mead & Co., New York, botanical drugs, has moved its offices from 124 Front st., to 150 William st., that city.

Van Velsor Smith Accounts

J Van Velsor Smith, New York, manufacturers' export agent, has added The Pfanstiehl Chemical Co., Waukegan, Ill., Wilcox Co., Athol, Mass.; Harris Rubber Co., Akron; and Miner's, Inc., New York, to his list of accounts.

Governmental

Dr. Cullen and Drug Control

Dr. Frederick J. Cullen has for the second time succeeded Dr. James J. Durrett as Chief of Drug Control, Food and Drug Administration. When, in April 1930, Dr. Durrett resigned this position to become chief health officer of the state of Alabama, Dr. Cullen was appointed to the vacancy, only to step aside for Dr. Durrett who returned to the position a month later.

Dr. Cullen makes the following statements regarding the conduct of the office of Drug Control Chief by him.

"I see no reason for much change in the policy of the Administration, the law was enacted to protect the public against

Dr. Frederick J. Cullen

false and fraudulent therapeutic claims for medicinal products, and against misbranding and adulteration in various forms. We believe we are right and unless and until the U. S. Supreme Court decides otherwise, we will continue our work pretty much as in the past.

"We will do our best, with the personnel and funds available, to enforce the law to the limit, but we will cooperate, as far as is possible with the drug trade, where it wants to cooperate."

"Diseases and organs or members should not be mentioned on labels unless preparations so labeled are a remedy for the disease so mentioned or for all diseased conditions of the organ or member so mentioned.

"Under the decision of a federal court in the case of Lee's Save the Baby, manufacturers are reported to believe they have the right to mention diseases and organs or body members without regard to the rule referred to. We do not believe that to be the case and will not be satisfied until the Supreme Court passes on the question.

"By reason of curtailment of funds and personnel, the project system of enforcement will be continued, the Administration concentrating its efforts on certain classes of medicinals such as antiseptics, influenza remedies, malaria cures, kidney disease preparations, etc."

With regard to the ergot standard and the U. S. P., Dr. Cullen sounds very much like his predecessor, Dr. Durrett, saying in effect the following:

"The apparent rise in ergot standard potency is the result of enforcing the provisions of the present ergot monograph . . . If suggestions submitted by the Department to the Revision Committee are adopted, the apparent increase in ergot potency would be checked . . . All that the Administration can do is to co-operate with members of the Revision Committee and give them the benefit of knowledge acquired by experimental work and otherwise in enforcing the Food and Drugs Act . . . It is for them to set up a standard, it is for us to enforce it."

Rumors are heard to the effect that:

Complete harmony has not existed among the enforcing officials . . . Differences are said to have arisen between Dr. Durrett and Chief of the Chemical Unit of Drug Control Dr. A. G. Murray, as well as between Durrett and other department chemists including the late Dr. P. M. Lowell . . . Dr. Durrett served notice on Director of Regulatory Work Walter G. Campbell that the authority of medical officers in Drug Control must be supreme in that office, despite chemical officials formerly being superior to medical officials in this work.

Three Drug Control Vacancies

News that Dr. George E. Clarke, medical official in the office of Drug Control, resigned his position, came to light simultaneously with the news of the resignation of Dr. Durrett. There are now three vacancies in this Drug Control—Dr. Clarke's place, Dr. Cullen's position vacated by his promotion, and the position vacated by the death of Dr. P. M. Lowell. Drug Control Chief Cullen states that in accordance with President Hoovers' economy program, the Administration will continue with as many of these positions vacant as is possible.

New Vitamin Assayist

Further light on the employment situation in the Administration had previously been shed by Assistant Chief, Dr. P. B. Dunbar, who, in discussing vitamin products on August 15, had stated that the Administration would shortly add another bio-assayist to its staff to devote his time to tests of food products and drugs labeled as containing vitamins. Other significant remarks by Dr. Dunbar on that

A Small Family well cared for

We are specialists. Forty important Crude Botanicals, more or less, concern us most. Largely, we control the Central European plantations from which our Crude Drugs are imported. Because we are a PRIMARY SOURCE OF SUPPLY, you benefit two ways: highly interesting quotations: quality supervised by our on-the-spot representatives. Samples for the asking. Quotations contract or spot.

CHAMOMILES STRAMONIUM
BELLADONNA LINDEN (Tillia)
DANDELION ROOT PSYLLIUM
HENBANE ALCANET ROOT
HOREHOUND
ALTHEA LEAVES AND ROOTS

PEPPERMINT

Unusually high oil content. Practically free from spearmint. Four years ago the genuine English Mitcham leaves were transplanted in the large Hungarian plantation exclusively controlled by us. The peppermint since grown by us has yielded by far the highest oil content and has tested almost completely free from spearmint.

Samples—Quotations

CHAMOMILES

Buyers of crude botanicals who know the difficulty of procuring Chamomiles to match U. S. P. standards of cleanliness will be in best position to appreciate the stock available from us. Working closely with only the most reputable growers through a resident principal at the European fields, all Chamomiles are cleaned under our exacting supervision. Not a single B. B. & L. shipment has yet had to be returned for any reason.

Samples—Quotations

BAMBERGER BLOCH & LANDESMAN, INC.

35 FRONT ST. NEW YORK, N.Y.

30 Klauzal Ucca - - - Budapest, Hungary.

Tank Farm
New Petroleum
Harbor

ERNST SCHLIEMANN'S OELWERKE
GESELLSCHAFT MIT BESCHRANKTER HAFTUNG
HAMBURG

Factory
Wilhelmsburg

ALBINOL

Genuine Russian White Medicinal Mineral Oils

have a particularly high Viscosity

New York Office and Warehouse
SCHLIEMANN COMPANIES, Inc.
53 Park Place **New York, N. Y.**

occasion were that "tests made by the Administration indicate that there are some valuable vitamin concentrates on the market, but that there are other preparations put out as valuable nutrition adjuncts which are only ordinary food products, or, in some cases, even less; that there is no test-tube method of determining vitamin content, the only way being to try out the food or drug over a considerable period on some animal affected by the lack of vitamin; that the usual test to determine whether vitamin D is present requires about 16 rats".

B. & M. Appeal Dropped by U. S.

The B. & M. External Remedy litigation was brought to a close by a statement from the Department of Agriculture, August 24, which announced that the Solicitor General of the United States had decided that it was inadvisable to apply to the Supreme Court of the United States for a review of the "multiple seizure" case, involving multiple seizures of alleged misbranded drugs by the Federal Food and Drug Administration. Thus was ended a long litigation begun when the Administration sought to remove from the market the B. & M. External Remedy manufactured by the National Remedy Co., Boston.

In announcing this decision it was made plain that "the Government does not mean to imply that it acquiesces in the correctness of the ruling of the lower Court, but that the remedy company by consenting to decrees of condemnation and forfeiture of its preparation as an adulterated and misbranded product, has made academic the issue involved in the injunction proceedings. This makes it impractical and unnecessary to take any further steps toward a review of the case in the Supreme Court".

Campbell Wants Law Strengthened

Walter G. Campbell, director of regulatory work, Department of Agriculture, addressed the annual convention of the Association of Dairy, Food and Drug Officials at West Baden, Ind., September 4, . . . urged strengthening of the food and drugs act, complained that the present law permitted the sale of food and drugs without any representation whatever concerning the identity of the ingredients or their nutritive or therapeutic value.

Food and Drug Seizures

Two hundred and ten seizures during July and August; 105 cases sent to the solicitor with recommendations for prosecution; such was the record of the Food and Drug Administration during the summer season. Among the seizures mentioned in the statement were seven consignments of ether; adulterated and misbranded proprietaries and foods; and a shipment of 76 cases of canned peas. The peas are historical because they represent cause for the first legal action under the McNary-Mapes amendment to the Food and Drugs Act. The peas were said to contain an excessive quantity of hard peas and violation of the act is charged because the shipper did not label his goods substandard in accordance with the provisions of that amendment.

F. T. C. Cites Northam Warren

Northam Warren Corp., New York, "Cutex", "Odorono", is being investigated by the Federal Trade Commission for alleged use of paid testimonials that were not true in fact, which charge is emphatically denied by the corporation.

Rubenstein Charged with Price Fixing

Helena Rubenstein, Inc., New York, is charged with making resale price agreements with dealers. This complaint, which has been denied by the company, is being investigated by the Federal Trade Commission.

Minnesota Permits Colors

Minnesota has changed its regulations regarding the use of certified coal tar dyes in foods where such dyes may be used in all food products in which an artificial color is permitted. Heretofore these dyes have been restricted to confectionary and beverages. Minnesota thus becomes the last state in the Union to grant the extended use of certified coal tar dyes in food products.

Seek to Cut Narcotic Use

Division of Mental Hygiene, U. S. Public Health Service, in cooperation with the American Medical Association and the Committee on Drug Addiction, Division of Medical Sciences, National Research Council, are aiming towards the reduction of legitimate uses of narcotic drugs through a series of articles in the journal of the American Medical Association which are planned to diminish as far as possible the cases of drug addiction for which physicians may be blamed.

Lovlox Not Confusing with Notox

Inecto's suit opposing registration of trademark "Lovlox" for a hair dye claiming similarity to "Notox", was dismissed by U. S. Patent Office which ruled that two marks were not alike.

Vapozin Denied Trade Mark

American Sundries Co. has been denied registration of trademark "vapozin" by the Commissioner of Patents on the grounds that the prefix "Vapo" made the proposed mark deceptively similar to "Vaporub" and therefore be likely to cause confusion to the purchasing public as to the origin of the respective goods.

Olsen Assists St. Louis Survey

Paul C. Olsen, specialist on drug store cost problems, has been added to the staff of trade analysts of the Department of Commerce, Washington, now conducting a national drug store survey in St. Louis. He was released temporarily from the Druggists' Research Bureau to permit him to assist in the national survey's study of wholesaler-retailer relations.

Doran Returns

Dr. James M. Doran, Commissioner of Industrial Alcohol, has returned from Europe with considerable data on chemicals used as alcohol denaturants. These will be investigated further as to their possibilities for use in this country.

Fight Alcohol Indictments

American Solvents & Chemical Co., Roessler & Hasslacher Chemical Co., Syrup Products Co., and the Glidden Co., are among the more than a dozen corporations which have moved to quash the indictments for conspiracy to divert industrial alcohol for beverage purposes, on the contention that unauthorized persons were regularly permitted in the Federal grand jury room during the investigation preceding the return of the indictments. the persons whose presence was objected to were John F. Coldiron, an investigator for the Department of Justice, who was designated special assistant attorney-general during the investigation, and Edward L. Koontz, a court stenographer, who was given a special appointment as an assistant district attorney and assigned to record all of the testimony given during the inquiry.

A. M. A. Accepts

Pentobarbital-Sodium N. N. R. The mono sodium salt of ethyl-barbituric acid, differing from soluble barbital U. S. P. in that one of the ethyl groups of the latter is replaced in the former by a 1-methyl-butyl group. Occurs as a white, crystalline, odorless powder, with a slightly bitter taste; very soluble in water; freely soluble in alcohol; practically insoluble in ether. Action and uses essentially similar to those of barbital, but it is effective in smaller doses.

Capsules Pentobarbital-Sodium-Abbott, manufactured by Abbott Laboratories, North Chicago, Ill. Each capsule contains pentobarbital sodium N. N. R., 0.1 Gm. (1½ grains)

Pulvules Pentobarbital-Sodium-Lilly, manufactured by Eli Lilly & Co., Indianapolis. Each pulvule contains pentobarbital sodium N. N. R., 0.1 Gm. (1½ grains) and starch, 0.13 Gm.

Cod Liver Oil

The Consuming Season is approaching.
We Recommend the

PEDER DEVOLD BRAND

Highest Grade Medicinal Oil
Practically Free of Odor and Taste
Richest in Natural Vitamins

Headquarters for
DRUGS, OILS, CHEMICALS, RAW MATERIALS

Alkaloids	Acid Citric, U.S.P.
Camphor	Bay Rum
Menthol	Cocoa Butter
Quinine Sulfate and Bisulfate	Haarlem Oil "Klaas Tilly"
Santonine	Witch Hazel, N. F.

CHAS. L. HUISKING & CO., Inc.
155 Varick Street New York City

THREE ELEPHANT
BORAX
BORIC ACID

Stocks carried by the following distributors:

A. Daigger & Co., Chicago, Ill.
Detroit Soda Products Co., Wyandotte, Mich.
Arnold, Hoffman & Co., Providence, R. I. Philadelphia, Pa.
Thompson Hayward Chemical Company, Kansas City, Mo. St. Louis, Mo.
Marble Nye Co., Boston, Mass. Worcester, Mass.
Innis, Speiden & Co., New York, N. Y.
Maryland Chemical Co., Baltimore, Md.
In Canada
St. Lawrence Trading Company, Ltd.
Montreal, Toronto and Vancouver

American Potash & Chem. Corp.
WOOLWORTH BUILDING NEW YORK CITY

BILE SALTS
CHOLESTERIN
IRON PEPTONATE

THE WILSON LABORATORIES

4221 So. Western Ave., Chicago, Ill.

also

816 First Ave., New York
24 Oregon Ave., Philadelphia
869 Folsom St., San Francisco
1220 W. Pico St., Los Angeles
826 Clark Ave., St. Louis

"Standard of Quality Always"

PLYMOUTH
MEDICINAL WHITE OILS
Russian *Domestic*

COLD CREAM OILS
and
ALL RAW MATERIAL FOR TOILET CREAMS

STEARATES
ZINC ALUMINUM MAGNESIUM

Made Right *Priced Right*

M. W. PARSONS IMPORTS
AND
Plymouth Organic Laboratories
55 ANN STREET, NEW YORK

Germany Restricts Strophanthus

Strophanthus Gratus seed and strophanthin obtained from this seed has been substituted for any similar product by a regulation in Germany which became effective in July. The use of Strophanthus Kombe and Strophanthus Hispidus (U.S.P. standards) is no longer permitted in Germany because, it is reported, they have been found so dangerous and generally unsatisfactory.

Associations

N. W. D. A. Convention

National Wholesale Druggists' Association will hold its annual convention at the Ambassador Hotel, Atlantic City, October 19-22. Dr. E. L. Newcomb, secretary of the association, has announced that the convention will be an outstanding one from the point of view of business to be discussed and reservations already made indicate that it will be well attended.

Harry J. Schnell, Oil, Paint & Drug Reporter, is chairman of the general committee in charge of arrangements, and Aglar Cook, Topics Publishing Co., chairman of the golf committee. The annual tournament will be played over the course of the Seaview Golf Club, October 20. In addition, there will be a well rounded entertainment program for members and their guests.

Cloughly Heads F. W. D. A.

Federal Wholesale Druggists' Association held its annual meeting at the Hotel Royal York, Toronto, Canada, September 1-3. O. J. Cloughly, St. Louis Wholesale Drug Co., was elected president succeeding James H. Marshall, manager, Northwestern Drug Co., Minneapolis, who was elected treasurer for the coming year. W. W. Stephens, managing director, Drug Trading Co., Ltd., Toronto, was elected vice-president, and R. E. Lee Williamson, re-elected secretary.

The speakers, in addition to the officers, included Joseph J. Dreyer, New Jersey Wholesale Drug Co., chairman of the association's executive committee; Samuel C. Henry, secretary, N. A. R. D.; and Paul Pearson, Washington Wholesale Drug Exchange.

Manufacturers will now be admitted to associate membership in the association, according to an amendment which was unanimously adopted.

New Members

A. K. Hamilton, Hazel Atlas Glass Co., and L. Sonneborn & Co., all of New York, have been elected members of the Drug & Chemicel section, New York Board of Trade.

Terri Cosmetics Corp., New York, has been elected to membership in the New York Credit Men's Association.

Ostlund Addresses Board of Trade

Professor H. J. Ostlund, director of the statistical division, National Wholesale Druggists' Association, addressed the first Fall meeting of the drug and chemical section, New York Board of Trade, September 15, at the Drug and Chemical Club, New York, on the subject of "Distribution Costs in the Drug Field".

Official Tares Revision

Drug and chemical section, New York Board of Trade, has started a revision of "official tares", last formally adopted in 1924. The work will be done by the committee on tares, of which Irving McKesson, New York Quinine & Chemical Works, is chairman, and the findings published in booklet form for distribution in the trade.

Reinier Committee Chairman

J. J Reinier, Lehn & Fink, Inc., Bloomfield, N. J., has been elected chairman of the membership committee, Drug and Chemical section, New York Board of Trade.

Associated Chain Meets

Associated Chain Drug Stores, drug chain association, held its annual convention at the Hotel Roosevelt, New York, September 21 and 22. There are 1500 stores operated by the members of this group of which the leading member is the Walgreen Co.

Affiliated Drug Meets

Affiliated Drug Stores, chain store association, held its semi-annual meeting at the Hotel Commodore, September 8 and 9. Its members are: Albright & Wood, Mobile; Beaton Drug Co., Omaha; Benson, Smith & Co., Ltd., Honolulu; Crown Drug Co., Kansas City; Economical Drug Co., Detroit; Economical Drug Stores, Inc., New Orleans; Fifth Avenue Drug Co., Seattle; Arthur Gold, Jersey City; Goode's Drug Store, Asheville, N. C.; The C. H. Griest Co., Inc., Wheeling, W. Va.; Hartig Drug Co., Dubuque, Iowa; John L. Herpich, Columps, Ohio; Herzfeld-Phillipson Co., Milwaukee; Hewit Pharmacies, Inc., Binghamton, N. Y.; Himmel's Drug Stores, Lynn, Mass.; Jacob's Pharmacy Co., Atlanta; Martin Drug Co., Tucson, Ariz.; Meyer Brothers Co., Fort Wayne, Ind.; Nauheim Pharmacy, Inc., New York; Peck Drug Co., Grand Rapids, Mich.; Peoples Drug Co., Boston; Peoples Pharmacies, Inc , Baltimore; Pioneer Drug Co., Yakima, Wash.; W. P. Pipkin, Waco, Tex.; Rea & Derick, Inc., Sunbury, Pa.; Red Cross Pharmacy, Miami, Fla.; Rennebohm Drug Stores, Inc., Madison, Wis.; Reznor Drug Co., Sharon, Pa.; Rutledge Drug Co., Akron; Silver Rod Stores, Brooklyn; Sontag Chain Stores Co., Ltd., Los Angeles; Stanley Drug Co., Philadelphia; Sutliff & Case Co., Inc., Peoria, Ill.; Weinberger Drug Stores, Inc., Cleveland; Widmann & Teah, Inc., Lock Haven, Pa.; H. A. Woods, Inc., Evansville, Ind.

Advertising

Drug Trade Advertising Off 5%

Drugs and toiletries magazine advertising totalled $2,233,880 during August, 1931, a decrease of 5.2 per cent from the August, 1930 total of $2,355,580. Of the month's expenditure in 1931 for national magazine advertising, $1,732,152 or 78.4 per cent was spent in advertising beauty preparations and toilet goods; and $477,504 or 21.6 per cent in advertising medical and proprietary goods, according to Dorrance, Sullivan & Co., Inc., New York advertising agents. Of this total expenditure $2,209,656 was spent in national magazines compared with $2,316,585 in August of 1930, a decrease of 4.6 per cent. In August of this year in national farm magazines the industry spent $24,224 compared to $39,015 for the same month last year, a decrease of 38 per cent.

During July, 1931 the expenditure by manufacturers of drugs and toiletries for radio broadcast advertising over national networks totalled $452,839, a gain of 90.5 per cent over the total of $237,668 spent in July, 1930. The industry spent a total of $3,181,914 for radio advertising during the first seven months of 1931, an increase of 87.6 per cent over the similar expenditure of $1,696,691 during the same months of 1930, a large enough increase to offset the decline in magazine advertising during that period. The total for all national advertising during these seven months of 1931 was $24,704,170, representing a gain of 4.5 per cent over the total of $23,682,713 for the similar period of 1930.

For the first eight months of 1931 magazine advertising expenditures totalled $23,756,136, a decline of 2.4 per cent from the similar total of $24,341,602 for 1930. The advertising expenditure in national magazines for the eight months' period totalled $23,358,520 in 1931 compared to $23,937,015 during 1930, a decline of 2.4 per cent, the similar expenditure in farm magazines being $397,616 for 1931 compared with $404,587 for 1930, a slight decline of 1.7 per cent.

Account Changes

Petroleum Derivatives Co., Montclair, N. J., "Vapon Liquid Cleaner", "Vapon Facial Milk", to Redfield-Coupe, Inc., New York.

La Gerardine, Inc., New York, hair waving lotion to Biow Co., Inc., there.

Certifoods, Inc., New York, sieved vegetables food, to N. W. Ayer & Son, Inc., there.

Manhasset Chemical Co., Inc., New York, proprietaries, to Zinn & Meyer, Inc., there.

T.L. SPECIALISTS SINCE 1884 PIONEER

BEESWAX

Pure White Sun Bleached

Guaranteed under Food and Drug Act of June 30, 1906, Serial No. 4068.

Specify

T. L. BRAND

Sun Bleached under glass from the highest quality crude yellow beeswax obtainable. Especially suitable for the manufacture of toilet preparations of quality, that will keep and not turn rancid or yellow.

PIONEER BRAND---Yellow

THEODOR LEONHARD WAX CO., Inc.
HALEDON PATERSON NEW JERSEY
Long Distance Telephone: ARmory 4-1690

PIONEER T.L.

Are you CONVINCED that your factory methods can not be improved and your operating costs lowered?

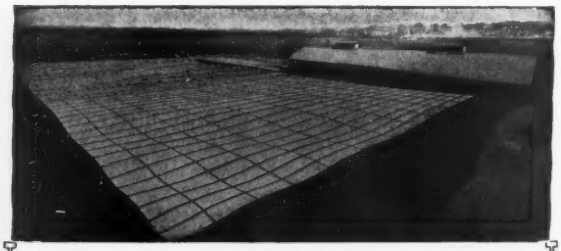
If you are, this message will be of no value to you. It is intended only for progressive executives who realize the economy of an unbiased *outside* viewpoint in solving unusual problems and in detecting the causes of high costs—which frequently escape the attention of those in immediate contact with production because of the blinders placed upon them by necessary and unavoidable routine.

Those who are "willing to be shown" will give us an opportunity to make a plant inspection. It will cost nothing and it may save much.

FRANCIS CHILSON

Consulting Production Engineer

101 West 31st St. New York, N. Y.



BEEHIVE BRAND BEESWAX

Absolutely Pure
and
Sun-bleached

Stearic Acid—Red Oil
Glycerine—Ceresine
Spermaceti

WILL & BAUMER CANDLE CO., Inc.
Syracuse, N. Y.

SELLING LATIN AMERICA

Are you interested in exporting

Pharmaceuticals
Proprietaries
Toilet Preparations
Drug Sundries
Hospital and Surgical Supplies

Phone or Write

J. VAN VELSOR SMITH

WHitehall 4-0998

35 Water Street New York

GLYCERINE

All Grades

◆

COLGATE-PALMOLIVE-PEET CO.
Palmolive Bldg. Chicago, Ill.

Produced at and shipped from

NEW YORK LOUISVILLE
KANSAS CITY SAN FRANCISCO

Johnson & Johnson, New Brunswick, N. J., "Johnson's Medicated Plasters", to J. P. Muller & Co., there.

Shadowfoam, Inc., Cleveland, proprietaries, to Gerstenberger Advertising, Inc., that city.

Schuyler Products Co., Philadelphia, "HAV", a cleansing cream, to Joseph R. Mickle, that city.

Pepsodent in Newspapers

Pepsodent Co., Chicago, has resumed newspaper advertising after a lapse of eighteen months during which the radio was used exclusively.

On the Air

LA GERARDINE

La Gerardine, Inc., New York, hair waving preparations, "Walter Winchell's Guest Programs" featuring Ruth Etting, and other names well-known to Broadway, CBS network, every Friday night beginning September 14.

HEALTH PRODUCTS

Health Products Corp., Newark, N. J., proprietary medicines, "The Country Drug Store", NBC network, every Tuesday.

D'ORSAY

D'Orsay Perfumeries Corp., New York, "The D'Orsay Program", NBC network, every Saturday evening at 8.30.

Obituaries

Dr. Charles C. Brace

Dr. Charles C. Brace, president, Denver Chemical Manufacturing Co., New York, ("Antiphlogistine") died at Star Lake, N. Y., August 25, aged 82. He was born in Grand Rapids, Mich., Nov. 3, 1849, and educated at the University of Nebraska and Hahnemann College, Chicago. For some years he practiced medicine in Georgetown, Boulder, and Denver Colorado. During his stay in Boulder, he served two terms as mayor of that city. He first became interested in "Antiphlogistine" in 1893 and was one of the founders of the Denver Chemical Manufacturing Co., becoming its president in 1897. He was one of the drug industry's pioneers in expansion in foreign markets, exporting his first shipments in 1901. Today the company has a dozen foreign plants and sells its product in every country but Russia. He made his home in Tarrytown, N. Y., and was president, Tarrytown Hospital Association; director, Westchester County Savings Bank; and a member of the Sleepy Hollow Country Club.

Robert J. Pfeffer

Robert J. Pfeffer, Denver representative, Lambert Pharmacal Co., St. Louis, died in that city August 16. Prior to his association with the Lambert company he had been with the Davis Brothers Drug Co.

Dr. T. C. Wheaton

Dr. T. C. Wheaton, president, T. C. Wheaton Co., Millville, N. J., hand blown glassware, died at Sea Isle City, N. J., September 9, aged 79. He was a pioneer in glassware manufacture and founder of the company which bears his name. Although president of the company, he had not participated in the active direction of the business for the past three years.

"Borax" Smith

Francis M. ("Borax") Smith, founder of the Pacific Coast Borax Co. and the first to produce refined borax in this country, died at Oakland, Calif., August 27, aged 85. He was born in Richmond, Wis., February 2, 1846, and was a graduate of Milton College, Wis., in 1863. He made his first discovery of borax in 1872 at Teel's Marsh, near Miller, Nev., and almost uninterruptedly from that time until his death was closely identified with the borax industry.

Walter Ernest Dixon

Professor Walter Ernest Dixon, noted pharmacologist and member of the League of Nations' expert committee on drugs of addiction, died August 16 at Cambridge, England.

Willis G. Baker

Willis G. Baker, for the past ten years manager, pharmaceutical department, Caldwell Sweet Co., Bangor, died at his home in North Bucksport, Me.

T. N. Dissosway

Thurston N. Dissosway, owner of the Eckford Chemical Co., Brooklyn, and for a number of years connected with E. R. Squibb & Sons, died at Lake George, N. Y., September 5, aged 53.

Mrs. Louis K. Liggett

Mrs. Musa Bence Liggett, wife of Louis K. Liggett, president, United Drug Co., Boston, died at Plymouth, Mass., September 6, aged 58. She was born in Detroit, and her name was prominently associated with Boston social and philanthropic circles.

Frank A. Stuart

Frank A. Stuart, president and founder, F. A. Stuart Co., Battle Creek, Mich., proprietaries, died August 2.

Financial

Drug Stocks Steady

Prices of common stocks of drug and cosmetics companies showed practically no change in August, according to the stock price index of the Standard Statistics Co., New York, and still continued substantially above the year's low. Somewhat more variation is shown in the prices of the common stocks of 337 miscellaneous industries, and a slight net gain is seen at the beginning of September. Detailed figures for both divisions follow:

1926 Average equals 100

	Drugs and Cosmetics	*337 Industrials*
Aug. 5	121.9	86.6
12	121.3	87.8
19	122.7	90.6
26	122.0	89.0
Sept. 2	122.0	87.2
1931 High	133.8	114.7
1931 Low	114.0	82.0
1930 High	174.7	174.1
Low	115.8	98.2

Colgate Stockholders

Colgate-Palmolive-Peet Co. has outstanding 1,999,970 shares of common stock, of which a total of 397,566 shares, or 19.8 per cent, were registered in the name of officers and directors as of June 27, 1931. The foregoing were also holders of record of 5.1 per cent of the outstanding 255,798 shares of preferred stock. President Charles S. Pearce is the largest individual holder with 128,320 common shares in his name, while 68,615 common shares and 11,621 preferred shares were in the names of members of the Colgate family. Other substantial blocks are held by Vice-president Felix Lowy and B. A. Massee and W. B. Johnson, a director.

Earnings

ABBOTT LABORATORIES

Abbott Laboratories has declared the regular quarterly dividend of 62½ cents payable October 1 to stockholders of record September 18. While the volume of business is less than last year the net earnings continue to be about 50 per cent more than the dividend requirements.

AFFILIATED PRODUCTS

Affiliated Products, Inc., reports for six months ended June 30: Net earnings after taxes and charges $694,587, equal to $1.82 a share on outstanding stock, compared with $370,044, or 97 cents a share, the year before.

AMERICAN HOME

American Home Products Corp. and subsidiaries reports for six months ended June 30: Net profit after depreciation, Federal taxes and other charges, $1,694,983, equal to $2.77 a share on the no par value stock, compared with $1,583,189, or $2.59 a share, in the first half of 1930.

Would you like to examine a copy of this book

The wealth of information it contains may save you many times the slight bother of dropping us a line.

Here are the contents of Drug Markets CATALOG and DIRECTORY . . . . .

Machinery
Equipment

—

Glassware
Boxes
Collapsible Tubes
Cans
Seals for Bottles, etc.
Liners (cap)
Shipping Materials
Shipping Containers
Papers
Labels
Cosmetic Specialties

—

Fine Chemicals
Medicinal Chemicals
Industrial Chemicals
Photographic Chemicals
Solvents
Raw Materials
Glandular Products
Oils
Waxes
Cosmetic Materials

—

Essential Oils
Aromatic Chemicals
Gums
Flavors

—

Botanical Drugs
Spices

—

Association Members
Prices (Range)
Imports (10 years)

If you have not seen Drug Markets CATALOG and DIRECTORY, you surely do not realize how complete and valuable a reference book it is.

It contains a directory for more than 2,000 products—a thoroughly well edited directory too. But the directory is just the beginning of the value of the book.

Each one of these products, which cover the whole range of materials, equipment, packages, etc. used by manufacturers of pharmaceuticals, toilet preparations, cosmetics, proprietary medicines, flavors and products of a similar chemical nature, are accurately and completely described.

Buyers, chemists, plant managers, have written us enthusiastic letters on the value of this book.

We would like to have you examine this book with no feeling of obligation. Then if you find it thoroughly worth while, a subscription to DRUG MARKETS at three dollars a year gives you the book free. Otherwise return it in ten days at no cost. Get a personal copy of this book and DRUG MARKETS. Drop us a line to send you the book.

We are in receipt of your Directory which is certainly very well gotten up and most complete.
Bert O'Leary,
Kiefer-Stewart Company

We undoubtedly will find a great deal of use for this publication (Drug Markets Catalog).
John R. McClelland,
The Kolynos Company.

It is one of the finest publications of its kind which it has been my pleasure to inspect. I assure you it will be employed frequently in our institution.
Bern B. Grubb, Pres.,
Lafayette Pharmacal Inc.

We compliment you on this very interesting and instructive compilation of unquestionable value to the industry.
F. K. Thayer,
Abbott Laboratories.

Congratulate you on the interesting manner in which you have assembled the information—a splendid work.
G. C. Parsons,
The Arner Co., Inc.

It makes quite an impressive volume and we expect to find it very useful.
R. Roy Miskimon,
Ciba Company, Inc.

We want to compliment you on the wealth of information contained in your book.
John P. Curran,
Curran Laboratories, Inc.

Your book is a veritable encyclopedia—its structural details are superlative and worthy of commendation.
M. Lemmermeyer,
Givaudan-Delawanna, Inc.

The Catalog in our opinion is very well gotten up and contains a mass of information which is bound to prove helpful from a reference standpoint for months to come. We have occasion to refer to it frequently and we know we will find it of value to us.
H. F. Brownell,
McKesson & Robbins, Inc.

We appreciate your sending this to us, and shall make good use of it.
The Pompeian Company, Ltd., Canada.

DRUG MARKETS, INC.

101 West 31st Street New York City

ARMSTRONG CORK

Armstrong Cork Co. reports for six months ended June 30: Net income after depreciation, interest and inventory adjustments but before Federal taxes, $879,047, equivalent to 79 cents a share on 1,239,247 capital shares outstanding, against $733,308, or 59 cents a share, on the same basis last year.

CHESEBROUGH

Chesebrough Mfg. Co. has declared an extra dividend of 50 cents per share and the usual quarterly dividend of $1 per share on the $3,000,000 common stock, par $25, both payable Sept. 30 to holders of record Sept. 11. Like amounts were paid on March 31 and June 30 last. In March, June and Sept. 1929 and 1930 an extra dividend of 50 cents per share was also paid, as compared with an extra of $1 per share on Dec. 30, 1929, and on Dec. 30, 1930. Extras of 25 cents per share were distributed on June 30, Sept. 29 and Dec. 28 1928.

COTY

Coty, Inc., reports for the six months ended June 30 net income of $433,909, or 28 cents per capital share, after Federal taxes, depreciation and other charges. This compared with $1,103,470, or 74 cents per share, in the first half of last year. The figures do not include any equity in earnings on the stock owned by the company in foreign subsidiaries. The net for the quarter ended June 30, was $118,504, or 8 cents per capital share, comparing with $315,405, or 20 cents a share, in the preceding quarter, and with $185,226, or 12 cents a share, in the June quarter last year.

DRUG, INC.

Drug Incorporated reports net profit for the six months ended June 30 of $10,656,054, or the equivalent of $3.04 pre share on 3,501,499 shares outstanding at June 30. This compared with earnings of $10,542,006, or $3.01 per share for the first half of last year. Gross profit for the period was $35,780,215. The consolidated surplus account as of June 30 showed earned surplus of $23,197,053 which compared with $19,547,541 as of December 31, 1930.

MCKESSON & ROBBINS

McKesson & Robbins, Inc. reports for six months ended June 30: Net profit after all charges including interest, depreciation, income taxes and dividends on stock of McKesson & Robbins, Ltd., $1,300,380, equal after preferred dividends, to 51 cents a share on common stock, compared with $1,409,116 or 61 cents a share last year.

The slight decrease of $109,000 in earnings available for dividends was made in spite of a decrease of 9½ per cent in sales, and in spite of the company's having set up $170,000 more in reserves for doubtful accounts than was set up for the first half of 1930, says "The Financial Chronicle". In other words, the company in 1930 effected a general reduction in expenses which, in the first six months of this year were approximately 10 per cent less than the same six months in 1930, and it is pointed out by the management that a return to normal conditions and a recovery of the volume lost will not necessitate any appreciable return to the higher operating expenses.

Net profits on the company's own manufacturing business were approximately 9½ per cent higher than for the same period last year. In addition to its own output, company is one of the largest distributors of other drug products. Normally its most profitable business comes in the last half of the year, due to the heavy sales of specialties for the Christmas season.

MEAD JOHNSON

Mead Johnson & Co. and subsidiary report for six months ended June 30: Net profit after Federal taxes and $27,243 as additional provision for indicated shrinkage in the market value of securities $673,532, equal after preferred dividends to $3.72 a share on the common stock, compared with $904,658, or $5.12 a share in the first half of 1930.

OWENS-ILLINOIS

Owens-Illinois Glass Co. reports a net income of $2,716,839 for the fiscal year ended June 30. The net was equal to $2.43 a share on the common stock after dividends on the $6 cumulative preferred shares. Net income for the year ended December 31, 1930, was $2,738,541, or $2.45 per common share.

VADSCO SALES

Vadsco Sales Corp. reports for six months ended June 30: Net loss after taxes, depreciation and other charges, $68,863, compared with loss of $124,582 in the first half of 1930.

New Incorporations

Vreem Medicine Corp., New York City—S. Zirn, 215 Montague St., Brooklyn, N. Y., 300 shares common.

Wildwest Drug Co., Wilmington, Del., —drug stores, Corporation Trust Co., $200,000; 12,000 shares common.

The Alabama Chemical Co., Savannah, Ga., manufacturing merchandise—Corporation Trust Co., $235,000; 2,350 shares common.

A. A. Beaudry, 220 Broadway, New York City, toiletries, cosmetics—200 shares common.

Pylam Products Co., New York City, merchandise—Otterbourg, Steindler & Houston, 200 Fifth Ave., New York City, 100 shares common.

Opulent Flavors, Rochester, New York, foods, extracts—$20,000.

Distillers Preparations, Inc., Newark, N. J., medicines—Manuel Hoenig, Newark, $50,000 pf., 10,000 shares common.

General Flavoring Products Co., Pittsburgh, Pa., flavoring products, drugs, chemicals—Colonial Charter Co., $100,000.

Times Drug Co., New York City, chemicals—M. Krinsky, 152 West 42nd St., $10,000.

Ansonia Chemists, New York City, —Exco Lawyers' Albany Service, 116 Nassau St., $20,000.

Service Chemical Co., New York—F. J. Neglia, 63 Park Row, $20,000.

Service Chemical Corp., Paterson, N. J., manufacture chemicals—Emanuel Shavick, Paterson, 6,000 shares common.

The Rea Reta Corp., New York City, soaps, toilet articles, creams, rouges—Corporation Trust Co., 6,000 shares common.

Bates Products, New York City, medicines—H. T. Basseches, 521 Fifth Ave., $10,000 pf., 100 shares common.

Akro Herbs, Buffalo, New York, chemicals—E. J. Clark, Buffalo, $2,000.

Kim Chemical Products Co., Wilmington, Del., chemicals, medicines—Colonial Charter Co., Wilmington, $150,000.

Sauvage, Ltd., Wilmington, Del., perfumes, cosmetics, powders—General Corporation Service Co., Wilmington, $75,000.

Ge Lex, New York City, cosmetics—Palmer & Series, 46 Cedar St., 200 shares common.

Pharmaceutical Oils, Brooklyn, N. Y.—P. K. Clymer, 19 West 44th St., New York, $25,000 pf.; $25,000 common.

Continental Chemical Corp., N. Y.—S. Berg, 215 Montague St., $10,000.

State Exterminating Co., Inc., Union City, N. J., manufacture poisonous chemicals, etc—Aldeman & Aldeman, Union City, 100 shares common.

The Citrus Drinks, Inc., Wilmington, Del., soft drinks—Corporation Fiscal Co., Wilmington, Del., 900 shares common.

Bicks Chemical Co., New York City, —Strongin & Hertz, 189 Montague St., Brooklyn, N. Y., $20,000.

Nationwide Fruiteries, New York City, fruit juices—T. J. Johnson, Jersey City, N. J., $5,000.

No-San Soap Products, New York City—L. H. Greenspan, 51 Chambers St., 200 shares common.

Sommers Beauty Salon, New York City, cosmetics—H Kirshbaum, 67 West 44th St., 100 shares common.

B. & B. Bottle Co., Brooklyn, N. Y., bottle filling machinery—C. M. Rechenberg, 26 Court St., 200 shares common.

Perfectochol Co., Buffalo, New York, chemicals—E. Werner, Buffalo, $5,000.

Wilbur Co., Inc., Richmond, Va., manufacture and deal in drugs, medicines and chemicals—$25,000.

Gervaise Graham Co., 25 West Illinois St., Chicago, Ill., toilet preparations, cosmetics.

Streamline, New York City, chemical products—R. Shepard, 55 Wall St., 950 shares common.

William Neuberg, New York City, chemicals—S. V. Ryan, Albany, N. Y., 100 shares common.

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Raw Materials

Tartaric Acid Price War

A keen competitive condition has arisen in tartaric acid. During the past three weeks domestic producers have reduced their price four times, with importers following this lead. Domestic spot price is now 27½c to 28½c per pound as to quantity, with the importers selling ½c per pound lower at 27c.

Reports in the trade would indicate that the competition is due to rivalry among the domestic producers. One of the producers in the middle west has been selling below the open quotations, with the explanation that it was to meet competition from abroad. This however, was construed by the leading producers in New York as being aimed directly at them. They therefore issued revised price schedules to meet each report of a price lower than existing schedules. These prices were promptly met by the importers.

Tartaric acid is produced from imported argols, wine lees, and calcium tartrate by four companies in the United States, two of the largest of which are located in New York, domestic raw material coming principally from France. Competition is primarily with Germany and Italy. In the latter part of 1925 an international syndicate was formed comprising the principal tartaric acid producers of Germany and Italy. The purposes of this syndicate embrace the division of markets between the individual producers and a pooling of sales, together with a uniform price policy.

Consumption in the United States is estimated to run from 7,000,000 to 8,000,000 pounds per year with approximately 2,000,000 pounds of this amount of foreign origin.

Production costs abroad are somewhat below that in this country. In the Summary of Tariff Information, production costs for Germany and Italy is put at .1981 per pound. To this must be added a tariff of 8c per pound plus shipping charges which would indicate that imported material today is being sold at a loss.

This is also true of the domestic material. Production costs is estimated at .2665 per pound which would indicate that domestic manufacturers are also selling at a loss.

According to figures just completed by the Department of Commerce, total imports of tartaric acid for the month of June amounted to 117,629 pounds. Germany was the chief supplier with shipments from that country amounting to 70,800 pounds. Shipments from the Netherlands amounted to 33,600 pounds, with Italy coming third, supplying 13,229 pounds.

Cream of Tartar Reduced

Cream of tartar has been affected by the reductions in the price of tartaric acid. During the past month the price has been reduced ½c per pound and is now generally quoted at from 22¼c to 22½c per pound. The market is still competitive and with the unsettled conditions prevailing on the raw material further reductions are anticipated.

Rochelle Salt Off 1c

Rochelle salt has been reduced 1c per pound during the past month and is now being offered at from 17½c to 18½c per pound as to quantity. The lower cost of tartaric acid has been passed along to producers of this commodity. Rather severe competition still continues in this item and the undertone at the lower level is still easy with still lower prices looked for.

Seidlitz Mixture Lower

Seidlitz mixture has been reduced due to the lower cost of tartaric acid. The reduction during the past month amounted to 1c per pound with the item now being offered at from 14c to 14½c per pound as to quantity. With the very unsettled conditions existing in tartaric acid further declines are predicted.

Menthol Future Uncertain

Menthol continues quiet but the market is firm in that the advance which went into effect several weeks ago is being maintained. Price quoted is generally $3.75 per lb. in cases and $4.00 per lb. for less. Stocks here are small and in strong hands. The factors that obtained control of the metnhol market and were responsible for the increase in price last month are still very bullish and predict a $4.00 price for menthol in case lots. These predictions are based on the small existing supplies here and the continued firmness in the primary market.

Other opinions in the market tend to contradict these bullish factors. They point out the fact that new business placed in Japan continues to be very small. With the Japanese carrying very heavy stocks from the last crop and the distillation of the present crop now under way, they feel that the primary market will eventually have to lower their asking price, as it becomes daily more imperative that they move larger quantities of menthol.

German menthol still continues to be a factor in the competitive situation. The importer of this German product is quoting below the Japanese price and is offering menthol at $3.60 per lb.

Glycerin Remains Low

Glycerin is steady as it is reported that the prevailing low price of 11½c per lb. for CP is quite close to the cost of production. The total volume of sales is reported below normal but equal to that established during the past several months. The largest consuming season—antifreeze solutions—is now approaching so that a decided improvement in the volume of business done is anticipated.

United States production and trade in glycerin during comparable six months periods is shown in the following table:

Glycerin	*Six Months 1930 Pounds*	*Six Months 1931 Pounds*
Import (general)		
Refined	933,450	665,150
Crude	4,566,513	5,303,859
Exports	214,000	163,420
Production:		
Crude, 80% basis	71,785,580	70,366,387
Dynamite glycerin	23,722,533	21,099,729
Chemically pure	36,629,803	37,438,713
Stocks—June 30:		
Crude—% basis	13,841,262	13,183,235
Dynamite glycerin	9,925,377	11,685,623
Chemically pure	9,536,365	10,778,964

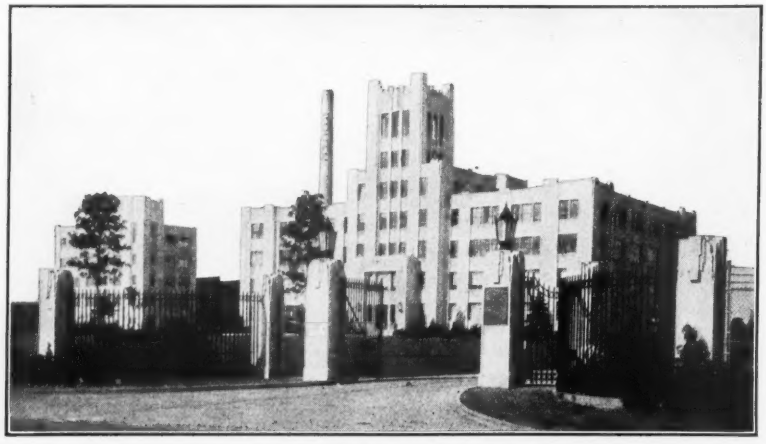
Six months figures given below reveal a changed condition in British glycerin trade with a marked increase in imports and a drop in exports.

Six months ending June 30		*Crude* *Cwt.*	
Imports and Consumption:	1930	9,720	£16,635
	1931	11,957	18,558
Exports	1930	13,457	23,492
	1931	13,791	18,272
Six months ending June 30		*Distilled* *Cwt.*	
Imports and Consumption:	1930	5,416	12,837
	1931	10,667	22,207
Exports:	1930	39,165	103,666
	1931	34,107	84,583

Quinine Slightly Unsettled

Quinine is unchanged in a market way since this time last month. The "official" Dutch monopoly price is still quoted at 36 cents per ounce for both sulfate and bisulfate. Competition is understood to have an inside price of 35 cents per ounce on the sulfate and bisulfate, and even fractional shading of this price is reported. There are no indications that there will be any further general reduction in the market, but the continuance of a somewhat unsettled condition does not permit of definite conclusions in this regard.

ROCHE



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Alcohol Steady

Alcohol is reported as being firm at the prevailing schedule of prices. A good movement of number 5 has been noted during the past month with the result that the bulk of the old formula has gone out into consuming channels. The new formula is more generally offered at a premium of 1c a gallon over the old formula. This adjustment of price is due to the higher cost of denaturing the new formula rather than by any material change in the market position. Quotations for numbe 5 alcohol are on the basis of from 28c per gallon in drum carload lots to 36c per gallon for single drums.

There is a little more inquiry for the higher formulae of denatured alcohol but the total volume shipped is below normal for this season of the year.

Mercury Still Fluctuating

Mercury on spot is somewhat firmer in undertone with sales mostly in small lots. Official quotations remain unchanged at from $85.00 to $87.00 per flask. During the past month, however, this commodity has fluctuated in accordance with competitive conditions encountered on individual sales. Some sales have been made as low as $82.00 and as high as $86.00 per flask.

It is reported now that due to prevailing low prices, several more of the small mines have found it unprofitable to produce, and have shut down, at least temporarily. These mines usually operate with very small capital, and as there are only a few men employed in each mine, they can resume operations practically over night.

Reduced production has had a stabilizing effect so that during the next few months a slightly better tendency is expected to develop. Mercury is now moving into consuming channels at a rate that would indicate total consumption of about 25,000 flask per annum. There is no change in the situation abroad.

Amidopyrine Firm

Amidopyrine is reported as being firm at the prevailing schedule. This commodity is offered at from $4.00 to $4.10 per lb. with a fair inquiry and sale supporting the price at this level. Stocks are said to be not over large.

Bismuth Salts Unchanged

A fair demand is reported for bismuth metal and its salts. The commodity remains without price change. The steady position of the metal has created stability in the salts. A similar position is said to prevail abroad. Metal is generally quoted at $1.40 per lb.

Camphor in Short Supply

Camphor is reported as meeting with a fairly good demand and this is attributed to a certain extent to the prevailing paralysis epidemic. Prices remain firm and unchanged from levels reported a month ago.

Assistant Trade Commissioner Howard B. Titus, Tokyo, Japan, states that several months ago reports were current in the trade that the Japanese Government camphor monopoly was to be turned over to private interests. Recent reports indicate that no change in the present system in Japan is even contemplated.

Norwegian Iodine

A new Norwegian company for the manufacture of iodine from kelp ash has recently been organized. This enterprise, capitalized at $17,420, is sponsored by an Oslo paint firm. The factory, which it is claimed will require about 500 metric tons of kelp ash annually, is now being constructed near Kopervik and will be completed in September. There are two other iodine producing concerns in Norway, the Skaalevik Kemiske Fabrikker A/S at Bergen and Lofotens Kemiske Fabrikker at Stamsund. Most of the kelp ash produced is ordinarily purchased by the Iodine Trust.

Cod Liver Oil Strong

No price movement has been noted in cod liver oil although this commodity continues in a firm position with the possibility of an advance as soon as the heavy consuming season gets under way. There has been little demand for this item at present with reports that most of the larger factors have covered their requirements. Shippers in the primary market continued their reserved policy feeling sure that they will secure higher prices for their oil with the advent of cold weather.

Agar Firmly Held

Agar Agar continues to be very firm in undertone with the recent advances well maintained. Demand has not improved materially but stocks are reported to be in very firm hands and the primary market continues to ask high prices for replacement.

Total imports of agar agar into the United States during the first six months of 1931, amounted to 367,802 pounds, valued at $224,716. This shows a considerable increase over the total of 242,095 pounds, worth $189,967 received during the same period in 1930.

Santonin Possibilities

Santonin manufacture is claiming the attention of some of the Indian suppliers of wormseed, according to reports from that country. India has been shipping large quantities of wormseed to London during the past year, but the santonin content has not been especially high and it is felt in some circles that it might be better to locate a factory at the center of the wormseed production. In this way, the difficulties involved in transportation and labor would be largely eliminated. At the same time, investigations are being carried on with a view to locating supplies of wormseed at higher altitudes, which might carry a higher percentage of santonin, and thus be more satisfactory to present buyers of Indian wormseed. As may be readily understood, santonin producers are interested in securing a raw material with a santonin percentage guarantee, and in producing regions thus far exploited, this has not been possible. Interesting developments based upon the results of present investigations are expected within the next half year.

Pyrethrum Flowers Shaded

With a dull market prevailing in pyrethrum flowers a slight recession in price is noted. Offerings are on the basis of from 17c to 18c per lb., with powdered being offered at from 20c to 21c per lb.

Of interest in this market is a report from Assistant Trade Commissioner Edward G. Eichelberger, Belgrade in which he states that a reorganization of Dalmatian pyrethrum is being undertaken. Prior to the World War, Dalmatia was the only important world source of pyrethrum flowers. Lack of competition resulted in a rather disorganized operation of the industry and better enabled Japan to develop and attain a prominence in this trade when the Yugoslav production was curtailed during the war period. Active steps are now being taken, however, by official and private agencies looking toward the rehabilitation of the Dalmatian industry. It is planned to establish a standard of single grade of pyrethrum under Government supervision, to improve exising packing and storage methods and to eliminate as far as possible transshipment at points where no control may be exercised by Yugoslav authorities. These efforts are being developed with a particular view toward the establishment of a known reputation for quality in world markets and the development of direct trading relations, particularly with American importers and consumers.

Helonias Root Down

Helonias root has been reduced to the basis of from 30c to 32c per pound. Demand has been very quiet.

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Vanilla Beans Steady

Vanilla beans are meeting with a fair demand with prices being well maintained. 1930-31 Mexican crop is now estimated at from 150,000 pounds to 170,000 pounds of whole beans and from 50,000 to 70,000 pounds of cuts. It is reported that the Mexican crop was harvested months ago and has all been cured, much of it having been sold and shipped. The next crop to be harvested toward the end of the year appears to be average, both as to quality and quantity. No accurate estimates can be made as to the next crop until after the end of the rainy season, in September and October, as both excessive rains and excessive sunshine damage the green beans. The beans have now attained their full length, and during the next few months will fill out to full body. This filling out takes place during the dry weather following the rainy season, and is dependent upon weather conditions.

Shipments of vanilla in July were smaller than in the previous month. The following table shows the shipments since January first. The weights given are the gross weights including all containers. Shipments during the corresponding period of last year are given for comparison.

	1931		1930	
	Cases	*Kilos*	*Cases*	*Kilos*
January	6	710	101	12,361
February	14	1,525	86	8,732
March	72	4,225	162	36,738
April	47	4,918	115	12,742
May	195	15,893	161	14,909
June	373	35,047	179	16,600
July	245	21,811	186	19,432
	952	84,129	990	121,514

There have been no changes in the local vanilla industry recently. The sudden drop in the value of the silver pesos, however, is said to have been of great advantage to the curers and exporters, since all sales are made in dollars, and all purchases of green beans, costs of curing, interior shipment, etc., are in silver pesos. The larger number of silver pesos received for vanilla sales in dollars provides a larger profit for the exporter.

Exports of vanilla beans from the Society Islands to the United States during the quarter ended June 30, 1931, amounted to 11,240 pounds compared with 2,200 pounds during the March quarter of 1931, says American Consul William P. Garrety, Tahiti. Exports to France in the June quarter amounted to 32,166 pounds compared with 13,200 pounds in the March quarter exported to France and New Zealand combined.

Prices received for vanilla beans at Tahiti during these two quarters reached the lowest figures in the history of the Colony.

There is but little accurate information of any kind available concerning the actual amount of vanilla beans exported during any given time. Many of the vanilla exporters purchase the beans from the planters and have them inspected but do not ship during the month of inspection. During the season of 1931 the planters have greatly increased the bearing of their plantations. This interest is due to a large extent to the fact that the other leading exports are bringing in only a small revenue. There are at present six vanilla plantations in Tahiti in a cultivated condition, one in each of the following districts—Paea, Taravao, Fautaua, Papenoo and two plantations in Papara. The plantations in the outlying islands have been left to grow wild. This includes those located on the islands of Raiatea, Rimatara, Tubuai and the Marquesas.

Citronella Firm

Java citronella oil is firm in the spot market continuing in the strength shown a month ago. Cable quotations from the primary market came through at prices unchanged. Ceylon oil continues in good supply with rumors current throughout the trade that sales are being made at prices below the actual market. This grade can be purchased in drums at from 37c to 38c per pound.

Vice Consul Llewellyn E. Thompson, Colombo, reports Ceylon exports of citronella oil were 313,394 pounds, valued at $84,065 for the second quarter of 1931, an increase in quantity but decline in value from the corresponding period last year, when 282,172 pounds, valued at $120,708, were exported. According to a prominent shipper the demand was irregular and closing prices, on June 30, were about 70 Ceylon cents for ordinary and 72 Ceylon cents for pure. Supplies were normal, although the monsoon rains are reported to have affected the supply since the first of June. The declared exports to the United States amounted to 86,803 pounds, valued at $28,213, during the second quarter of 1931, as compared with 101,340 pounds, valued at $51,877, for the same period of 1930.

Beeswax Exports Greater

Beeswax exports from Madagascar increased in 1930 as compared with the preceding year. Total shipments amounted to 584 metric tons valued at $271,572 in 1920 as against 424 tons worth $247,840 exported in 1929. Only small quantities of the Madagascar beeswax is consumed locally for polishing wooden floors and furniture, practically the entire output of the island being shipped overseas, principally to France, the United Kingdom, and Germany. (Consul John S. Richardson, Tananarive.)

Sarsaparilla Root Lower

Slow trade in sarsaparilla root is responsible for a decline in the Mexican variety. Spot price is now 14c and 15c per pound. Honduras root remains unchanged.

Gum Arabic Still Weak

Gum arabic is still weak due to a falling off in demand and heavy stocks both here and in the primary market. While leading dealers continue to quote from 9c to 9½c per pound for amber sorts it is reported that a good sized quantity could be purchased for 8½c per pound. The higher grades of gum, which have not declined with the same amount of violence as the amber sorts during the past several months, are lower by 1c per lb. White No. 1 is offered at 20c per pound and seconds at 19c.

Assistant Trade Commissioner Gabriel D. Ferrante, Cairo, reports that May arrivals of gum arabia at all of the markets of the Kordofan Province totaled 51,440 cantars, compared with 59,137 cantars received during the previous month and 30,020 cantars in May, 1930. (One cantar equals 99.05 pounds.) Receipts at El Obeid, the principal trading center in the Sudan amounted to 31,124 cantars, during May, 1931, contrasted with 32,860 cantars, in April, and 15,731 cantars in May, 1930. The average price of gum arabic per cantar in the El Obeid market during May was $1.90, as compared with $2.22 during April, 1931. Total exports during May from Egypt aggregated 1,844 tons, as compared with 2,232 tons, during the same month in 1930.

Gum Tragacanth Shaded

Gum tragacanth which has been rather well maintained throughout the Spring and early Summer has eased off somewhat being offered at from $1.30 to $1.40 per pound for No. 1, No. 2, $1.20 to $1.25 and No. 3 at $1.05 to $1.15. Turkish gum is down to from 45c to 90c as to quality on expectations of a larger crop.

Commercial Attache Julian E. Gillespie, Istanbul reports that the gum tragacanth yield during the 1931 season in Turkey is expected to more than double the 1930 output of 1,500 sacks. Gathering of the new crop begins about the middle of August with arrivals in the market in September. Stocks available in June totaled 640 sacks, of which about 100 sacks were of superior grade. Exports during the month amounted to 119 sacks, demand for the better grades being most active. Prices quoted on the local market showed a further tendency to decline during the month with only a few of the better grades holding steady.

Star Anise Higher

Star anise is higher price being marked up to 13c and 14c per pound. Stocks on spot are in strong hands with a higher and firmer replacement market prevailing. Spanish remains unchanged at from 7½c to 8c per pound.

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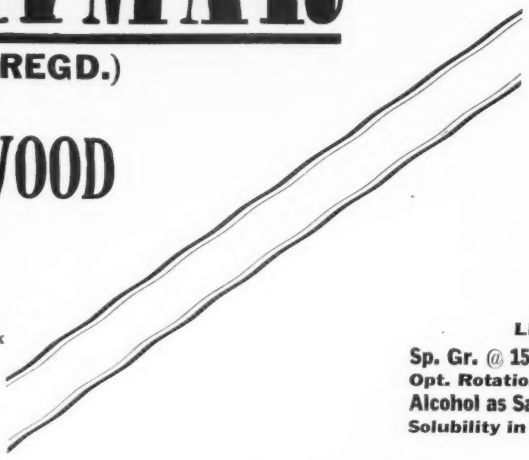

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Citrus Oils Remain Easy

The general undertone of citrus oils inclines toward the easy side. With the largest consuming season drawing to a close stocks on hand and in the primary market are plentiful. This has created a feeling in the trade that lower prices are in prospect.

Bergamot is dull as far as demand is concerned with a limited number of buyers appearing in the market. Price has eased off during the past month to the basis of from $1.80 to $2.15 per pound. Unsettlement seems to be the rule in the primary market due principally to the fact that attempts of the government to control prices has been unsuccessful. This has had a discouraging effect in the primary market where competition continues very strong. Spot competition has also increased.

Lemon oil is in plentiful supply. Stocks in Sicily are estimated at 1,050,000 pounds as of the end of June, which is about equal to the amount available at the end of last December. Italian oil is somewhat lower on spot at from $1.05 to $1.10 per pound. Domestic oil is quoted from 80c to 90c per pound.

Orange oil is subject to shading on spot with Italian definitely easier at from $2.00 to $2.25 per pound. Competition is active as stocks in the hands of buyers keep them out of the market.

Consul General Louis G. Dreyfus, Messina, reports that citrus oil prices advanced slightly in July as compared with the preceding month despite a very slow market. Foreign offers were scarce and producers reluctant to sell at prevailing prices. Reestablishment of the Bergamot Concortium probably caused a rise in bergamot oil from 16 to 20 lire. Present stocks considered ample with the exception of mandarin and sweet orange. Stocks on lemon oil estimated at one million pounds. Essential oil prices on July 27 per Sicilian pound Messina were as follows: Lemon sponge—8 lire to 8.50 lire; lemon machine 7 lire to 7.50 lire; sweet orange sponge—18.50; mandarin sponge—40; bergamot—19 lire.

Vice Consul H. A. Smith, Messina, reports that the position of the Italian essential oil market was difficult during the quarter under review (second quarter, 1931). Market quotations have been adversely affected by continued production and both domestic and foreign demand has been greatly curtailed. Inability of producers to realize on citrate of lime outlets has forced them to dispose of their oil on an already oversupplied market. Efforts of the Bergamot Consortium to secure control of the industry and stabilize prices have apparently not been successful as yet. During June, the Consortium quoted the same prices that prevailed in the open market. Further governmental assistance was asked to secure cooperation of producers. Sponge-pressed lemon oil opened the quarter at $0.38 per Sicilian pounds, dropped to $0.33 in May but closed on June 30 at $0.38. Machine pressed lemon oil showed some fluctuation but averaged about $0.89 per Sicilian pound. Bergamot oil during April quoted at $0.90 per Sicilian pound declined markedly in May but recovered and closed at $0.84 at the end of June.

Geranium Oil Easy

Geranium oils continue the easier tone that set in about this time last month. Although no price changes are noted from official schedules, there are rumors about that trade that bourbon oil is being shaded below the $3.90 per pound price that is generally quoted. There does not seem to be any doubt about the fact that these oils are in more generous supply.

Consul Oscar S. Heizer, Algiers reports that the Algerian geranium oil market is reported unsatisfactory at present. It is reported both producers and shippers have been selling forward quantities of oil which they may have to deliver at a loss. One shipper has failed and others are said to be in a difficult position. Reports of an early fall in prices are current among speculative interests. The May cutting is said to have been good, being estimated at 65,000 pounds. Under existing circumstances, some exporters are demanding a guarantee of purity from shippers. The present price of 230 francs per kilo is purely nominal.

Caraway Oil Firm

Oil caraway is steady both here and abroad. This is due to reports that the new raw material crop is late. Prices for raw material show a tendency toward weakness with the opinion current that lower replacement costs later on will ease this market off somewhat.

Erigeron Oil Price Off

Erigeron is lower on the spot at from $1.10 to $1.20 per pound. This represents a decline of 15c per pound during the past month. Production costs have been decreased by lower prices paid for new crop material. Stocks are in good supply with a small demand in the current market.

Bois de Rose Lower

The spot price of Bois de Rose has been adjusted to bring them in line with replacement costs, which have been lower. Brazillian is offered at from 75c to 85c per pound, with Cayenne demanding from $1.25 to $1.45 per pound on spot. A fair small lot business is reported.

Eucalyptus Oil at Low Point

Eucalyptus oil at present levels is said to be the lowest oil has sold at for a long time. As the active consuming season is just ahead it was assumed that the larger buyers would be attracted into the market by these apparently favorable prices. This does not seem to be the case, however, as the general volume done is not large.

A sample of oil which was stated to have been distilled from the leaves of a eucalyptus tree, fourteen months oil, was received by the Imperial Institute from the Director of Agriculture, Seychelles, in May, 1930, states a report in the Indian and Eastern Druggist. No information was furnished as to the species from which the oil was derived. The yield of oil from the fresh leaves, obtained in a still of rudimentary type, was 0.81 per cent.

The sample was slightly turbid owing to the presence of moisture. After filtration the oil was clear, pale yellowish-brown and had a pleasant odor resembling that of citronella oil. The quantity of oil was not sufficient to permit of the isolation and definite identification of the constituents present, but it would appear to consist principally of citronellal and geraniol, and thus to resemble Java citronella oil in composition, although containing less geraniol than the latter. The constants of the oil are similar to those recorded for the oil of Eucalyptus citriodora.

According to the Imperial Institute, this oil should find a market in the United Kingdom as a substitute for Java citronella oil, which is largely employed as a perfume for soaps. The commercial expert consulted considered that the Seychelles oil would have a similar value to the Java product.

Lime Oil Remains Firm

A firm position is maintained for expressed lime oil which still continues to be scarce. The market is well maintained at $12.00. Distilled, however, has turned a bit easier. Supplies here are better than has been the case in some time. The new crop coming in, it is reported, looks better. Present prospects would indicate that production will run above a year ago although it will not by any means be a normal crop. Distilled spot is $9.75 to $10.75 per pound.

Clove Oil Sharply Lower

Clove oil has been reduced sharply during the past month and still continues easy at the lower levels. U. S. P. oil in cans is quoted at from $1.20 to $1.25 per pound, being a reduction of 15c per pound. The lower prices paid for spice abroad is directly responsible for the reduction. A fair demand on spot exists.

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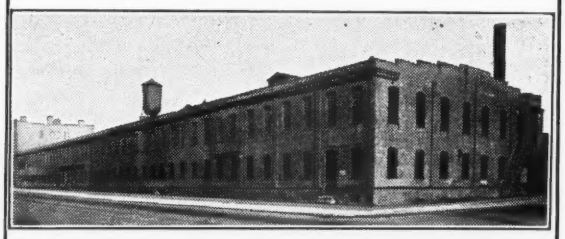

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Psyllium Seed Uncertain

Old crop French psyllium seed is falling off in demand somewhat and is now being offered spot at from 34c to 36c per pound. Most consumers are now content to await the arrival of new crop seed. Early arrivals are well sold up but additional lots are now on the way. These early arrivals have been sold for about 27c per pound but additional shipments on the way will probably be obtainable at a more attractive level.

The experimental plantings in Greece have been reported as successful but only a relatively small quantity will be placed on the market this year. The current crop was planted in March and April, but an earlier planting during the coming season is anticipated.

Indian seed remains without feature with a satisfactory volume of business being done in this grade.

Conditions in the psyllium seed market, as it may be called for the sake of convenience, have been further complicated by the appearance of another seed, *Lallemantia royeleana*, which seems to be superior to both the French black psyllium seed and the Indian blonde plantago seed. The recent arrival is discussed at greater length elsewhere in these pages, so that it will suffice to say here that it bids fair to be a very important factor in the market since it is characterized by a swelling power three times that of good psyllium.

Lallemantia royeleana also comes from India, and in appearance is narrowly oblong, brownish black in color with a dull surface. It is said to have been used for many centuries in that country both for intestinal and urinary ailments. It is being offered in this market under the commercial designation of salvia seed at 15c @ 17c lb.

Coriander Oil Steady

Coriander is well maintained from a price standpoint, although trade is light. Lower raw material costs are expected to effect the price position later on when replacement material appears in the spot market.

Raspberries Easier

Raspberries which showed considerable strength several months ago has now turned definitely easy. Prices have been reduced sharply to the basis of from 50c to 55c per pound. Earlier reports of a shortage and predictions of much higher prices do not seem to be holding out. The market is reported as easy at current level.

English Drug Crop Poor

The Indian and Eastern Druggist reports that this year's English herb crop is poor in general, due to lack of sun and excessive rain, though good crops are expected of borage, comfrey, rue, balm, scullcap, tansy, meadow sweet, and lettuce-opium. Belladonna, henbane, pennyroyal and stramonium have done badly. Potter and Clarke, the well-known growers, report that last year they imported Hungarian stramonium seed, as English seed failed to germinate, but the 1931 results are equally disappointing. It is evident, they say, that the doubtful yield in England makes it impossible to grow this plant at a profit. Poppy heads are also doubtful this season. Last year's seeds did not ripen, and the crop this year will be thin. Culinary herbs, such as sage, mint, parsley, are good crops and look well. Thyme and marjoram also look well, but unremunerative prices have almost eliminated the crop, and growers are giving up cultivation.

Calamus Root Lower

Calamus root, bleached is lower in the spot market being offered at from 32c to 35c per pound, a decline of 3c per lb. during the past month. Total volume of sales is small.

Cranesbill Root Shaded

Cranesbill root has been shaded in the spot market to the basis of from 7½c to 8c per pound on spot. New Crop goods have been bought at favorable prices. Stocks are in supply with liberal offerings being made at the new level of prices.

Chamomile Trend Mixed

Roman chamomile flowers are easier with price receding to 32c and 35c per lb. according to seller. Stocks are in plentiful supply. Hungarian are steady at this writing being offered at from 14c to 15c per lb. Some seem to feel that when more liberal supplies of new crop appear on market shortly prices will be somewhat lower.

Red poppy flowers are confined to sales of a small nature with the spot market developing a decided easy tone. Prices have been reduced 5c per lb. during the past month and are now offered at from 40c to 42c per lb. Undertones continue easy at the new level.

Elder flowers on a very small demand has declined 1c per pound. Offerings are now being made on spot at from 21c to 24c per pound. At the new level the market is reported as being easy.

Licorice Dull

The market for licorice root in this country is reported as being unsatisfactory from the standpoint of volume of business done. This commodity has shown a gradual decline in consumption from year to year. Although the total volume per year is still very large the trend toward lower consumption is definitely marked. This is attributed to the falling off in the popularity of chewing tobacco, in which licorice is used as a flavor and binder, and which represents the largest consuming market for this material.

Imports of licorice root into the United States during the first six months of 1931 amounted to 19,669,000 pounds valued at $437,600, as compared with 20,779,606 pounds worth $435,300 imported during the corresponding period in 1930. Licorice extract imports totaled 738,407 pounds worth $90,604 during the first half of 1931 contrasted with 425,354 pounds valued at $62,434 brought in from foreign countries during the same period of the preceding year.

Spot prices are low but unchanged for those reported a month ago.

Golden Seal Root Down

Powdered golden seal has declined 5c per pound during the past month and is now offered at from $1.40 to $1.45 per lb. Whole root remains unchanged at from $1.15 to $1.20 per pound. It is reported that export requirements during the next consuming season will play a large part in determining the price trend of this commodity.

Tartar Emetic on Weak Side

Tartar emetic remains unchanged from schedule of quotations last reported the market not having as yet been affected by the lower cost of the raw material. The undertone, however, is reported as having been weakened by the decline in the other tartar products and in most quarters lower prices are looked for.

Saponin from Soap Nuts

Saponin manufacturers are said to be experimenting with a new raw material, soap nuts, as a possible substitute for saponaria officinales. Soap nuts are said to contain a higher percentage of saponin than saponaria officinales and to be the raw material most widely used in Europe. It is also reported that but slight changes are necessary in extraction methods using saponaria officinales to adapt them to extraction from soap nuts. The useful part of the nut is the shell which could be purchased in this market for about 9c lb., while the whole nut would be more cheaply priced at about 6c lb.

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New crop prices for Italian citrus oils are quoted slightly higher than those which have prevailed for the past few weeks. In spite of these higher quotations from Italy, substantial advances are unlikely, but to-day's prices represent the most favorable levels witnessed in many years. We recommend purchasing at this time, and will be very pleased to submit samples and, quote prices on specific quantities.

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Grasse Market Facts

By O. C. Zilisch

WEATHER conditions throughout practically all of France remain very rainy and cool, with the exception of the Mediterranean region, including the Grasse section. In fact, the Grasse district would welcome rain, as the vegetation requires it. Consistent good weather may be excellent for the tourists visiting the region, but for the farmer too much sun spells unsatisfactory crops. Between the month of May up to the seventh of August practically no rain whatsoever has fallen, the only moisture of any value during that time falling on the night of August 7. It does not require any imagination to figure out that all of the cultures are bound to show an unfavorable reaction to a long dry period of this character.

Jasmine gathering is at its height, that is for what gathering there is, as this year will, no doubt, go down as the very worst that has ever been experienced in the Grasse region as such. Those close to the soil report that not in the history of the entire district has a like situation been encountered. The jasmine flower has always been regarded one of the major, if not the major, cultures of the section, and to have what amounts to ruin hit in the middle of things is anything but agreeable to the growers. They are very heavy losers this season, with the result that definite steps will be taken to rehabilitate the market all along the line. In other words, destruction of jasmine plantations is promised on a wholesale basis, and assurance is given that this is not simply a threat. For growers to continue the raising of an unprofitable culture would be business suicide, and everything possible will be done to offset the economic dangers surrounding the raising of this popular culture.

Jasmine Price Set

The perfumers' syndicate of Grasse has definitely set the price for the jasmine flower at 5 francs 50 centimes (22 cents) per kilogram delivered to the distilling perfumer's place of business. Gathering prices paid this season were from 3 to 4 francs (12 to 16 cents)per kilogram, leaving the grower no more than about 1 franc (4 cents) to cover everything, including transportation from the plantation, which amounts to about 50 centimes (2 cents) per kilogram. One can readily calculate what the grower is up against under circumstances of this kind.

Worst of all for many of the growers is the fact that no gathering at all is being done in certain sections, this spelling a complete loss to those concerned. The entire crop for this season is estimated to go no higher than one third of the accepted normal. Counting a normal crop with pay for flowers at a reasonable price, the growers should receive some thirty millions of francs. Now, the facts are these: even counting in those growers who are protected by contract under prices ranging from 12 to 14 francs (48 to 56 cents) per kilogram, the entire amount that the growers will realize this year can not exceed 5 millions of francs, a drop of twenty-five millions.

The economic story told by these figures is one that needs no elaborating, and makes it easily understandable that the growers will fight to the last ditch to protect their interests the next and following years. One guess is as good as another now, and time will, without any doubt, tell a highly interesting story during the next year or two.

Jasmine stocks remain a heavy load on the market, and with the coming into prominence of the synthetic product consumption has, in many instances, not been speeded up any on the natural product. There are, of course, a goodly number of manufacturing perfumers still using the natural jasmine from Grasse and they will continue to do so, but the movement into consumption in their direction is slow. A little turn in the economic tide will change things greatly, and tend to relieve an overloaded market.

As reported some time ago, every effort is being made to secure help of a substantial nature for the growers of jasmine, this aid to take the form of a government subsidy, based on protection for the region itself. Just how the parties responsible for this movement are progressing is not entirely clear, but it is thought that something may be possible of accomplishment. That help is needed everyone admits, but just how to apply it to the specific case in hand appears to be difficult. Of course, practically everybody is trusting in a more satisfactory solution to the whole problem, namely the movement into consumption of considerable stocks of jasmine products. Some of the old holdover stocks, it is pointed out, must be running low, and it is thought, therefore, that something along these lines may not be too far in the offing.

Lavender distillation ran well into the month of August this year and has practically been terminated at this writing. Production was low due to the dry weather conditions. Furthermore, the price paid for the flower this season was ridiculous, namely 50 centimes (2 cents) per kilogram. This was the average paid, some of the growers, of course, getting a slightly higher price in certain instances. Complications were enhanced on the side of lavender because of the lack of pickers. Labor of this kind is very difficult to find at the present time in France, where the unemployment problem is practically nonexistent. In this connection, it is interesting to note that the last figures available, August 21, show that all of France registered only 35,828 men and women out of work. The majority of these persons are to be found in the Paris district, through which the flow of foreign labor is directed. Many of those registered are also said to be persons who would not work, even if the best types of jobs were available. France as a country remains in a very sound, stable position with respect to unemployment.

Lavender Prices Rising

A certain movement upward has manifested itself on lavender oil, with the result that prices are rising all along the line. Furthermore, stocks in a number of instances are known to be low, with inquiries going out for the best possible prices. Many of those inquiring have waited to the last moment, and some buying can now be expected. Cable demands for prices in the Grasse region are an indication that something is happening on lavender oil. Prices vary, of course, with the types of oil requested. The most popular grade seems to be at this time 32/34 per cent. ester content. Lavender oil has suffered considerably during the past twelve months and more, with the result that a change for the better is welcomed in all quarters.

In regions like that of Apt the mountain lavender has been below the normal in production, with prices for lavender oils varying between 110 to 120 francs ($4.40 and $4.80) per kilogram (2.2046 lbs.). The yield in oil from the flowers in this district was not so bad, namely between

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700 grams and 1 kilogram, although the yield in oil on the whole remains low. Among some of the distillers the oils varied between 80 and 100 francs ($3.20 and $4) per kilogram.

Lavandins, cross between lavender and spike lavender, show practically same results in the Apt region, with prices for this type of oil ranging between 40 and 50 francs ($1.60 and $2) per kilogram.

Credit conditions in this section of the South are not so good, with the result that the purchases are being made for cash. This condition brings with it the usual consequences, and some interesting developments are looked forward to with respect to lavender. In fact, much is being done to try to establish a central bureau, properly financed, to handle all of the propaganda work and the selling.

From the Senez (Basse-Alpes) regions comes the statement that the yield there will not reach more than half the accepted normal. Oils from this particular section are considered as being very fine in quality. The yield in oil runs from 90 to 98 per cent., with ester content very high. These facts will help to make up the loss in yield. No prices are being quoted at the present time for oils from this district.

Lavender Fair This Month

It is generally at the sample fair of Digne that the market prices for the oils are fixed, and this year marks the eleventh milestone for this now famous fair, specializing in lavender. The fair this year will be held on the 26th of September, and a thorough study is scheduled of the underselling problem that has become accentuated with the coming of the economic crisis. Foreign competition is also being taken up and studied, to see just what can be done to keep French lavender in the position it has occupied for so many years.

Gathering of the Grasse type of mint will amount to nothing more than a formality, as this culture is gradually, but very surely, disappearing. The only hope for this plant is the herborist trade, which has, recently, been taking more of it than before. A number of outlets along these lines have served to stimulate the market a little. For the distilling perfumer the mint in the Grasse region does not hold out very much, and from this point of view it is no longer important.

The tuberose used to be a favorite in the Grasse region, but it, too, has fallen into the second or third line of cultures. Certain manufacturing perfumers are still staying with the tuberose, but many of those who used to employ this excellent oil have abandoned it. This year's production of the tuberose flower is estimated at 1/10th of the normal, which brings it down to practically nothing. Prices for the flower have not been definitely fixed at the present writing, but they are sure to be low.

Insofar as the rose-geranium is concerned, the Grasse region is producing practically none, most of this culture now being grown in the French colonies, Algeria taking the lead. This used to be an important flower in the section, but it has dwindled to practically nothing.

The herborists are showing a decided desire for lemon-scented verbena, and the trade on this has increased to considerable proportions during the past season. Up to the present time the production on this culture has not been extensive, but the increase in demand will, no doubt, serve to hasten further plantations.

Among the important cultures in rest is the May rose, which, due to the low prices paid this year for the flower, has discouraged the growers to a point where it is predicted that the majority of plantations are being neglected, with very great numbers actually abandoned. Production for next year is reported to be slated for a decided decrease, a decrease that can be felt. This will, of course, help the situation some, particularly if rose products move into consumption fairly evenly. Stocks of rose products are considered to be abundant, although the market is not thought to be overloaded in the event of a sudden turn for the better.

The orange trees of the Grasse region show up very well, and, compared with the other cultures, are, perhaps, in the best shape of all. There is a danger, however, that if the dry spell continues over too long a period that the vegetation will be stopped, only to start off at full speed in the autumn, the trees getting the impression that springtime is at hand. With an early frost this would, naturally, spell damage for the orange trees, due to the fact they would then be filled with sap. This has occurred several times in the region. At any rate, up to the present the trees are generally of fine aspect, and it is to be hoped that nothing unusual will happen to upset the plans of the growers of this important culture, as they have already suffered a great deal.

As indicated in previous reports, the olive trees showed up very finely, promising a good harvest for this season. The dry weather may, however, cause some sudden damage. Rain is necessary to save the crop. Forest fires throughout the Mediterranean region have brought with them some very disastrous results.

Wormwood Oil off Sharply

New crop oil of wormwood, bought several months ago at low levels, is now appearing on the market. Spot quotations under this influence have broken sharply, the decline being about $1.00 per pound. The oil is now offered at from $5.15 to $5.40 per pound. It is reported that these prices will be subject to further revision as deliveries of new oil increase and competition caused thereby expands.

Mint Oils Remain Weak

Peppermint and spearmint oils continue to be very weak with recessions in both items noted during the past month. The former is now selling at the lowest level reached in many years. Natural oil is very freely offered at from $1.65 to $1.75 per pound with shading from these levels reported. Spearmint oil is also much lower at $1.50 to $1.60 per pound and indications point to a still better buyers market in the near future.

The weakness in these oils exists in spite of the fact that they have not been well produced this year. Carryover stocks, however, are so far above normal as to offset the government estimates of a cut of approximately 39 per cent in the crop.

A preliminary survey of the mint crops by the Department of Agriculture indicate that in five of the more important producing States there will apparently be little more than three-fifths as large a production as a year ago. Acreage is reported to be nearly 30 per cent smaller than in 1930, and yields are running about 14 per cent lower.

Most of the damage to the crop was caused by mint flea-beetles and cutworms, which destroyed many fields. Additional acreage was abandoned because of poor stands due to late Spring frosts and dry, windy weather.

Comparative statistics for the past two seasons in five states are as follows:

Acreage		*Production in Pounds*	
1930	*1931*	*1930*	*1931*
52,380	37,380	993,000	606,000

Approximate average prices received by growers in five states on sales during specified crop seasons, not including sales of growers' stored stocks during subsequent seasons are 1930, $1.92; 1931, $1.52. Prices for 1931 are purely tentative and subject to change on basis of further sales.

Tansy Oil Declines

Tansy has declined sharply during the past month and is now offered at from $2.20 to $2.35 per pound. The market is still weak at the new levels with reports that some material has changed hands at as low as $2.10 per pound. The reason for the decline in this commodity is the low cost of new crop goods.

Wormseed Oil Firm

Wormseed continues very firm in undertone. Demand is light but the reports of a curtailed production in the South is generally accepted in the trade. Prices are not expected to go very high as the rather heavy carryover is expected to have a retarding effect.

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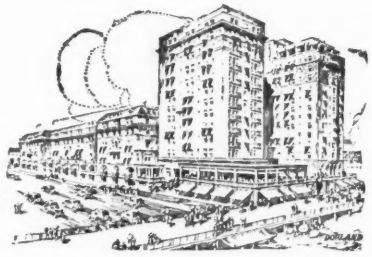

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(*Continued from page 237*)

generally light brown in color with a longitudinal yellowish brown streak on outer surface. Surface glossy.

Plantago loeflingii Linn — Plantain Family

Annual, hoary pubescent 6-9 inches high. *Stem* mostly short. *Leaves* alternate, narrowly linear lanceolate, acuminate, mostly entire, gradually narrowed into the petioles, usually 3-ribbed. *Scapes* slender, usually shorter than the leaves 4-6 inches tall. *Spikes* 1/3-⅝ inch long ovoid. *Fruit* 2, seeded. *Seeds*, deeply excavated 1/12-1/6 inch long, generally light in color with an oval area on the outer surface light brown in color. Surface, glossy. The light color of the seeds apparently is due to the loose contact of the mucilaginous layer with the surface of the main seed coat. This mucilaginous layer can easily be removed by use of forceps and a dissecting needle.

Lallemantia royeleana Benth — Mint Family

Annual, erect hoary pubescent or glabrate, 6-18 inches tall. *Stems* branched or simple, obtusely 4-angled. *Leaves* opposite, ½ to 1½ inches long, base cordate or narrowed into the petiole, ovate or obtuse, coarsely crenate, leaf bracts oblong or lanceolate teeth

Plant of Plantago Loeflingii Linn

Plant of Lallemantia Royeleana Benth

long awned; whorls very numerous, in long interrupted narrow spikes; *flowers* shortly pediceled, bracts small decidinous. *Calyx* 1/3 inch long erect rigid; *corrolla* pale lilac, tube hardly exerted. Fruit 4, 1-seeded nutlets. Nutlets, narrowly oblong brownish black in color; surface dull.

Mucilage content of seeds.

In order to obtain a comparative measure of the mucilage content of the different commercial seeds, the following test was made with each variety. One gram of the seeds in question was put into a graduated cylinder (usually 10 c. c.) filled with water (use a 50 c. c. cylinder in examining Lallemantia royeleana). The container was shaken frequently to facilitate the swelling of the mucilage. After approximately ½ hour the seeds in the cylinders were allowed to settle, and the total volume occupied by the swollen seeds noted. The final reading in cubic centimeters was taken as the swelling factor. The test was made on many lots and the swelling factor thus obtained for each variety was as follows:

Plantago psyllium	—	approximately 10
Plantago lanceolata	—	" 4
Plantago loeflingii	—	" 10
Lallemantia royeleana	—	" 30

The increasing use of psyllium is evidenced by a tendency to expand the utilization of this type of material. Sellers, at the present time, are doing extensive advertising to acquaint the public with the alleged merits of psyllium seed. Various kinds of Plantago are being sold with remunerative returns.

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Some dealers have extended the search for mucilaginous seeds of greater effectiveness than those known at present. It has been found that other seeds may be utilized. Among these the more promising at present is *Lallemantia royeleana*. This seed is characterized by a swelling power three times that of good psyllium. Other seeds of high mucilage content, if found to be harmless, may become strong competitors of psyllium.

Adulteration

Plantago psyllium has a market value at present greatly in excess of the market value of the other seeds under consideration, due perhaps to the popularity of the name "Psyllium" and evidently attempts have been made to manipulate the seeds of *P. lanceolata* so that they imitate those of Plantago psyllium. In some cases the seeds have been roasted or otherwise treated. This condition may readily be detected by their dull appearance, absence of germinating power, and lack of their normal swelling tendency as stated above.

The statement is frequently made that seeds of natural *P. lanceolata* and *P. psyllium* are sometimes mixed and then imported as *P. psyllium*. The writer has not recognized any such mixture, and it is doubtful if such a practice is customary among exporters to any material extent since such mixtures could readily be detected. Apparently mixtures of treated *P. lanceolata* and untreated *P. psyllium* are uncommon. Seeds

which have been roasted or otherwise treated in such a manner as to deceive the purchaser are refused entry as in violation of the Federal food and drugs act.

Discussion of Bundling

(*Continued from page 257*)

Now, which packages are adapted for machine bundling and which are not ?

1. Production of one size must be comparatively large.

Bundlers operate at a minimum speed of six bundles per minute and are capable of fifty or more. It is not necessary that the bundler be kept operating continuously in order to show considerable savings. The Norwich Company has indicated that for certain products a bundler operating only a tenth of maximum time would be an economical investment. At the present writing there are no semi-automatic bundlers and none is adjustable for different sizes of packages. The bundler is built specially for each product.

2. The bundle must be oblong in form.

This means that only a limited range of shapes can be bundled. Oblong packages are best, but square packages (such as face powder boxes, and ointment tins—in cartons) can be handled because the individual packages can be arranged to form an oblong bundle. All bottled products as long as they are properly cartoned may be bundled.

The advantages of machine bundling may be summarized thus:

Saving in cost of intermediate packing materials. Decrease in working capital invested in packing material inventories. Decrease in the amount of warehousing space devoted to packing materials. Decrease in the amount of outgoing freight. Decrease in the cost of bundling labor.

Machine bundles are uniformly neat and uniformly tight. In rush seasons bundling machines can be operated a few hours extra—if necessary—which insures uniformity of packaging, whereas in hand bundling, rush seasons require the addition of inexperienced help with the consequent danger to neat wrapping. Bundlers may be operated by inexperienced labor.

Hydrogenated Oils

(*Continued from page 240*)

bases when used in actual practice. A revision committee is in a better position to adopt an item when definite and positive advantages have been clearly demonstrated.

Standardization

The greatest obstacle in the way of official recognition of hydrogenated oils is undoubtedly the variability of hydrogenated oils and the lack of information as to just what kind of hydrogenated oil would be best. Most investigators have used some one hydrogenated oil and there is nothing to indicate whether a somewhat different product would be better.

The edible lard-like cooking fats on the market have been tried by some workers. It is not the policy to grant official recognition to a product controlled by one firm under a trade-marked name. However, it might be handled by using an official name such as "Hydrogenated Cottonseed Oil" and setting standards and specifications, which different manufacturers could meet. This procedure offers the best possibilities, but the problem is not as simple as would appear to the superficial observer. In the first place, there are two processes in vogue for making lard-like products by hydrogenation. In one process, the entire amount of oil is hydrogenated to the consistency of lard. In the other process, a large proportion of ordinary refined cottonseed oil is thickened by the addition of a small proportion of a hard, highly hydrogenated product. By both methods a product can be prepared having the desired melting point and iodine number, yet in the one case, the product contains more of the unchanged unsaturated linolin and it is questionable whether this product would be as stable as the one made by hydrogenating all the oil.

Furthermore, under certain conditions (high temperature, low pressure, low agitation and small proportion of catalyst) it is possible to hydrogenate the glycerides having two or more double bonds in the fatty acid radical, down to olein (having one double bond in the fatty acid radical) with only a slight increase in saturated glycerides. Under other conditions, there may be a great increase in saturated glycerides with a correspondingly high amount of the more highly unsaturated glycerides. This situation indicates the difficulty in really standardizing such a product.

Whether the variations in similar hydrogenated products would make any real difference therapeutically or pharmaceutically, is still an open question and one which must be settled before further progress can be made.

Manufacturing Possibilities

At the present time, one of the best possibilities is that of the use of hydrogenated oils by individual pharmaceutical manufacturers in ointment specialties. A pharmaceutical manufacturer could standardize on a definite source of hydrogenated oil, either by adopting a standard commercial product or by having a special product made to his specifications by a company engaged in hydrogenation of oils. Naturally pharmaceutical manufacturers avoid lard in special ointments of their own manufacture on account of the poor keeping qualities. Yet in certain ointment the therapeutic effect desired is such that a base like lard must be used to insure the proper results. In such a case the pharmaceutical manufacturer might well look into the use of hydrogenated oils, which might give a therapeutically superior product which would have its talking points and in addition, on the basis of published statements, it would be expected that such a product would keep for years, thus reducing the number of complaints on deteriorated products.

Patents

UNITED STATES PATENTS

Toilet Preparation

This patent is concerned with a cosmetic used on the face, the principal ingredient of which is titanium stearate. Henry G. Dusenbury, Essex Fells and Samuel Isermann, Summit, N. J. U. S. P. No. 1,818,699, filed September 14, 1928.

New Arsenic Drugs

These drugs are the thio-semicarbazones of hydroxy-arseno-benzenes, the variation in the constitution of which consists of the replacement of the hydrogen atoms in the benzene ring by hydroxyl groups and also by amino and halogen groups. Products are yellow to yellowish red in color and melt without decomposition. They are readily soluble in alkalies with formation of salts which are yellow to brownish-red powders and are readily soluble in water. Karl Streitwolf, Frankfort-on-the-Main, and Alfred Fehrle, Badsofen-on-the-Taunus, Germany, assignors, Winthrop Chemical Co., Inc., New York. U. S. P. No. 1,785,660, filed July 11, 1928.

Making Iodates

Iodates are made by a new process, which consists in bringing an alkali metal iodide into contact with oxygen at 300° and 550° C. at atmospheric pressure. Reaction is in presence of an alkali metal hydroxide and metal oxide such as aluminum oxide and bismuth oxide. Heinrich Heimann and Hans-Bernhard Seebohm, Dessau in Anhalt, Germany, assignors, I. G. Farbenindustrie A. G., Frankfort-on-the-Main, Germany, U.S.P. No. 1,800,630, filed September 12, 1928.

New Medicinal Composition

This composition contains the following products: Tincture of iodine, 2½ to 4%; phenol 1½ to 4%; solution of sulphurated lime 3 to 4%; liquid fatty oil 88 to 93%. Casmer R. Brown, Lubbock, Texas. U. S. P. No. 1,800,502, filed March 20, 1928.

Making Aromatic Aldehydes

Aromatic aldehydes are made by using the propenyl derivatives as starting materials. Thus the propenyl derivative of an aromatic hydrocarbon is heated with an alkali in presence of a hydroxy compound of group consisting of benzene and naphthalene which causes the solution of the propenyl compound, its corresponding aldehyde and the oxidizing agent during the oxidation process. The hydroxy compound remains substantially chemically unchanged. Jacob Ehrlich, Belleville, N. J., assignor, Verona Chemical Co., Neark, N. J. U. S. P. No. 1,801,416, filed October 12, 1928.

Solid Alcohol Iodine Solutions

Process consists in melting solidified alcohol by means of heat and then adding iodine and a water soluble iodine salt, such as potassium iodide, to the molten product. The amount of the iodide added must be sufficient to prevent subsequent liquefaction of the alcoholic solution after it congeals. It is also added for the purpose of producing the desired rubbing consistency when congealed. The alcoholic solution is caused to congeal due to reduction of its temperature, the iodine being added to the solution only shortly before it congeals. The congealed product is then formed into pencils. Karl Jungmann, Aussig, and Ostwald Kolbert, Nestomitz, Czechoslovakia. U. S. P. No. 1,806,260, filed July 11, 1927.

Preparing Antigens

This diagnostic product comprises a heavy suspension of bacteria belonging to a disease-producing class, and an organic dye, such as is employed in staining bacteria. This dye contrasts in color with the material to be tested and is present in amount sufficient to heavily stain the bacteria. An organic preservative is also present in the preparation and is of the type which does not interfere with the diagnostic test. The product obtained possesses the property when mixed with blood or serum, of rapidly agglutinating in the case of positive reactions into deeply stained clumps of bacteria which stand out in sharp contrast to the material to be tested, especially when viewed against a white background. Jacob M. Schaffer, Washington, D. C., assignor; Arthur M. Hyde, as Secretary of Agriculture of the United States of America. U. S. P. No. 1,816,026, filed November 25, 1930.

Method of Producing Alkaloids

This is a new method for extracting alkaloids from suitable starting materials and simultaneously separating the alkaloids from one another. Electricity is the active agent. A current is passed through an aqueous suspension of the starting material. Current density in the liquor is correlated with the hydrogen ion concentration of the liquor. A special apparatus is provided for this purpose, this apparatus containing a central cylindrical section set into a wooden vat, thus forming an annular space in which the liquor is placed and in which also are located the electrodes. Anton Hogstad Jr., St. Paul, Minn., assignor, The Northwest Paper Co., Cloquet, Minn. U. S. P. No. 1,815,302, filed March 17, 1926.

Making Alkyl Phenols

The starting point is a dihydroxydiphenyl-methane which contains different alkalyl radicles and an alkylene radicle forming a cyclic system within the two adjacent carbon atoms, and which is heated in hydrogen atmosphere in presence of catalyst until two hydrogen atoms have entered into combination. Walter Schoeller, Berlin-Charlottenburg, Hans Jordan, Berlin-Steglitz and Reinhard Clerc, Berlin, Germany, assignors, Schering-Kahlbaum A. G., Berlin, Germany. U. S. P. No. 1,805,555, filed June 22, 1928.

Mercapto Pharmaceuticals

This process is concerned with production of synethtic pharmaceutical chemicals of the mercapto type, that is metallic mercapto sulphonic compounds. These compounds have the following formula: —X. ($NH.CH_2.SO_3.Na$). (S. Me). (SOry). In this formula X represents an aliphatic, aromatic or heterocyclic radical, while Me represents a heavy metal and y either hydrogen or a metal. Walter Schoeller, Erich Borgwaldt, and Adolf Feldt, Berlin, Germany, assignors, Chemische Fabrik auf Actien (vormals E. Schering), Berlin, Germany. U. S. P. No. 1,784,497, filed April 26, 1927.

Vitamin Preparations

The first step in this new process of making vitamin preparations is to saponify a fat, rich in vitamins, with a solution of caustic alkali in a substantially non-dissociating solution. Thus substantially non-dissociated alkali metal soaps are formed. A proportion of edible fat is then incorporated into the resulting solution of non-dissociated soaps so as to dissolve the vitamins contained in it. Then the vitamized fat is separated from the solution of the non-dissociated soaps. Aage W. Owe, Oslo, Norway. U. S. P. No. 1,805,593, filed July 8, 1926.

BRITISH PATENTS

Easily Soluble Salts of Benzylmorphine

This process is concerned with the formation of easily solubles of benzylmorphine, otherwise known as peronine.

It has been found that the lower alkyl sulphonates, such as methane-sulphonate and ethane-sulphonate for example, of benzyl morphine are crystalline salts, which give stable aqueous solutions for use for injection purposes. Chemische Fabrik vormals Sandoz, Basle, Switzerland. B. P. No. 343,397, filed June 7, 1930.

Therapeutically Silicyl Compounds

These are new therapeutic compounds made with a silicon halide. Thus hydroxycarboxylic acids, esters or salts are treated with a silicon halide, such as silicon tetrachloride, especially in the presence of pyridine or other base. Or the salts are used in a solvent such as pyridine or ether, or the esters are heated with alkyl silicates. The silicyl derivatives of hydroxylated higher fatty acids, ricinoleic or dihydroxystearic acid, are soluble in fats and in ammonia. Silicyl derivatives of ethyl ricinoleate, ricinoleic acid (calcium salt and dibromide), dihydroxystearic acid lactic acid and methyl and amyl salicylates are described. H. P. Kaufmann. B. P. No. 343,165, filed November 15, 1929.

New Therapeutic Agents

These new synthetic pharmaceuticals are made from ortho-phenylenediaminestibinic acids, which are phosgenated, or from a diazotized aminobenziminazolone which is treated with antimonious acid. Various examples are given in the original patent. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. B. P. No. 343,072, filed November 11, 1929.

Citric Acid From Beet Sugar

Citric acid is prepared from beet sugar by fermentation. The process is also applicable to other organic acids, of therapeutical interest, such as oxalic, malic, succinic and fumaric. The acids are produced by inoculating sections or slices of plants containing fructose or fructose-yielding carbohydrates, such as for example sucrose or inulin, with a selected acid-producing fungus strain, and growing the fungus thereon. The cellular tissue of the plant sections may be broken down by successive freezing and thawing, and an alkaline or buffer material, preferably insoluble, may be applied to the sections, for example calcium carbonate, barium carbonate, zinc oxide or calcium phosphate. The sections may also be intermixed with inert packing before innoculation. F. J. Cahn. B. P. No. 345,368, filed January 4, 1929.

Perfumes from Cyclohexane Derivatives

Perfumes are obtained by mixing various cyclohexane derivatives with other ingredients usual in perfumes. These aldehydes may be obtained by condensing a ketone containing a carbon atom less than the aldehyde with a halogen acetic ester and splitting up the glycidic acid thus obtained. Examples are given of the admixture cyclohexane derivatives with ionone, methylionone, ylang-ylang oil, artificial jasmine oil, heliotropine, cumarin, phenylethyl alcohol, oil of bergamot, orange, oil, sandalwood oil and ambrette musk. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. B. P. No. 347,052, filed June 18, 1929.

Cineol Containing Oil Mixtures

In the production of cineols from terpinol, terpinenol, terpin, terpin hydrate, etc., by isomerization and/or dehydration, 1:8-cineol is the main product below a temperature of 80° C. For example with 30 to 40% sulphuric acid a temperature of 35° C. is used and with 60% sulphuric acid a temperature of —10° C. The product must be removed by distillation as formed. Distillation may be carried out in a vacuum or the product may be removed by extraction with chloroform or other suitable solvent. Hydration products from pinene or sabinene are suitable starting materials in this process. Rheinische Kampfer Fabrik, G.m.b.H., B. P. No. 345,517, filed April 5, 1930.

GERMAN PATENTS

Complex Lithium Citrates

Di-lithium-sodium citrate and di-lithium-potassium citrate are made by dissolving citric acid, one molecular weight, in ethyl alcohol or methyl alcohol, in which citric acid is easily soluble but the aforementioned salts only soluble with difficulty. Then one molecular weight of lithium carbonate, and after the removal of the carbon dioxide, one molecular weight of sodium hydroxide are allowed to act on this solution. The double salts are separated from the solvent and dried. Firm of Johann A. Wuelfing Berlin, Germany. G. P. No. 516,672, filed November 19, 1929.

Recovering Sterines

Sterines are recovered from microorganisms or parts of plants or animals by extraction. The starting materials are first subjected to an enzymatic degradation, which has the effect of dissolving or rendering soluble the cell walls. Then the product is directly extracted with suitable organic solvents. Thus the usual preliminary boiling with water is eliminated. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. G. P. No. 517,499, filed April 7, 1927.

Inoculation Serums or Vaccines

The filtrates from cultures of the known amoeboid form are transmitted by inoculation together with the customary bacterial cultures to a nutrient medium. The colloidal forms of growth, which are obtained in this manner and which may also result by instituting the Herelle phenomenon, is killed or weakened by the action of heat or by the addition of disinfecting agents in the usual manner. Dr. Philalethes Kuhn, Giessen, Germany. G. P. No. 517,204, filed February 12, 1929.

Thickening Agents for Cosmetics

Thickening agents for cosmetics and remedies are prepared by condensing fatty acids of high molecular weight of the acetic or acrylic series, their esters, chlorides, or amides, with amino-alcohols containing at least two amino groups, one of which is a tertiary one. In examples alpha-diethylamino-beta-hydroxylpropylamine is condensed in one case with oleic acid ethyl ester, in another case with oleic acid and in a third case with stearic acid; alpha-diethylamino-beta-hydroxy-gamma-phenylaminopropane is condensed with oleic acid chloride in one case and in another case with stearic acid chloride. I. G. Farbenindustrie A. G., Frankfort-on Main, Germany. B. P. No. 346,387, filed January 2, 1929.

Esters of Lactic Acid

These products are made from each other. This means that the lactic ester of one alcohol is heated with another alcohol. Thus for example ethyl lactate is heated with butyl aclohol and the displaced alcohol is removed continuously or at intervals. Imperial Chemical Industries Ltd., W. R. H. Hurtley and T. S. Wheeler, London, England. B. P. No. 346,486, filed January 25, 1930.

Thymol and Isomerides

This process is concerned with the manufacture of thymol and isomerides and homologues. The condensation products obtained from meta-cresol and para-cresol and an aliphatic ketone, is heated in hydrogen gas at 300° C. and vapors and hydrogen gas are passed over reduced nickel on a pumice carrier at 200° C. Schering-Kahlbaum A. G. B. P. No. 344,970, filed December 24, 1929.

Stable Solution of Stibinic Acid

This is accomplished in very simple manner by addition of high molecular weight alcohols. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. G. P. No. 515,113, filed February 25, 1927.

Salts of Cholin

Aryl-arsinic acids, containing one or more negative groups in the molecule are saturated with cholin. The salts of these acids may also be used and converted with equi-molecular quantities of cholin or cholin salts. It is also possible to make cholin salts of substituted aryl-arsinic acids. Dr. Karl Luedecke, Berlin-Dahlem, Germany. G. P. No. 515,092, filed September 11, 1928.

Abstracts

Perfume Aromatics

Author discusses synthesis of high molecular weight aromatic ketones and calls attention to high cost of products. He has developed a method for preparing these ketones by heating of dicarboxylic acids with their di-esters; quantitative yields are obtained and process may be used for preparing any number of monoesters and monochlorides. Effect of potassium hydroxide in dehydrating certain primary alcohols, while leaving the secondary and tertiary alcohols untouched is of considerable aid in certain aromatics synthesis. The relation between aromatic odor and molecular asymetry also receives attention. Various syntheses are described, such as new aldehydes discovered by the author, ketonic ethers, etc. Author pays particular attention to composition of oil of boronia megastigma, an expensive Australian oil. Dr. S. Sabetay, Riechstoff Industrie, 1931, pages 124-6.

The Bitter Orange

Those interested in bitter orange and its products will find a very thorough study in Prof. Guido Rovesti's monograph in number 2 of "Revista italiana delle essence e profumi," 1931. This is concerned first with various types of this orange, history and uses in medicine, perfumery, soap, liqueur, sugar, etc. industries. Also composition and properties of various essential oils obtained from plant, such as petit grain oil, neroli oil, bitter orange oil, orange flower oil, etc.

Digitalin of Nativelle and Digitoxin

Nativelle, obtained from digitalis purpurea in crystalline state, is most important of active principles contained in digitalis leaves. Digitoxin was isolated from this product and was considered different from digitalin. Digitoxin was studied by various authors and different formulae were obtained. Experimenters have observed the difference in action of the two products from physiological standpoint. Further study has been made and shows that both from chemical as well as physiological standpoint the digitalin and digitoxin are the same species of chemical substance. M. von Hasenfratz, Union Pharmaceutique, volume 72, number 3.

Gentiana Asclepiadea

Gentiopicrine is the ingredient that determines the therapeutic value of roots of gentiana lutea. Quantitative experiments have been carried out to determine amount of this glucoside in gentiana asclepiadea. This type of gentian is even a little richer in the glucoside than the yellow gentian. Roots or point of the rhizome is converted into a powder which is extracted with water containing chloroform in place of distilled water. St. Biernacki Rocziniki Farmacji, volume 8, pages 20ff.

Tincture of Iodine and Rubber

Tincture of iodine stored in bottle with rubber stopper colors skin yellow and not brown. Experiments made to determine action of tincture of iodine on rubber, which lasted for fifteen days, have proven that iodine diminishes by 29% and proportionally the quantity of hydriodic acid increases. Same results were obtained with tincture of iodine containing iodides. Fillers in rubber, such as chalk, oxide of zinc and the like, react with hydriodic acid and the iodide of zinc and of calcium remain dissolves in tincture. It is therefore not advisable to use rubber stoppers for flasks containing iodine; cork stoppers should be used, even though they decompose sooner, but they do not injure tincture in way that rubber does. Anony. Journal de Pharmacie de Belgique 1931, 414.

Ipecac Preparations and Stability

A study was made of the stability of various infusions and fluid extracts of ipecacuanha root, prepared under various conditions. Double infusions, 1 in 400, with addition of small quantities of hydrochloric acid gave extracts of most constant composition and highest alkaloid activity. A fluid extract, 1 in 20, prepared with dilute alcoholic hydrochloric acid suffered no loss in alkaloid activity over a period of nearly two years. H. Eschenbrenner, Pharmazeutische Zeitung, 1931, volume 76, pages 694-6.

Podophyllum Rhizome

Investigation was concerned with American and Indian crude fiber, with tests for resins and adulteration with guaiacum wood. Determinations of crude fiber have been made by the Dutch process, the Ministry of Agriculture process and by Dutch process after extraction with 90% ethyl alcohol. American podophyllum yielded following results: by first method 5.35%, by second method 7.5%, by third method 5.3% of crude fiber. Indian podophyllum yields 7.2%, by first method, 10.5% by second method, 6.7% by third method. Addition of a 5% aqueous solution of copper acetate to alcoholic extract gives a bright green coloration with American, and brown precipitate with Indian podophyllum. Sample of American podophyllum was found to contain Indian podophyllum and guaiacum wood. T. E. Wallis and S. Goldberg, Quarterly Journal of Pharmacy, 1931, volume 4, pages 28 to 32.

Testing Organo Mercury Compounds

This article was concerned with methods for testing bactericidal properties and value of some new organic mercury compounds. A large number of these were examined and it was found that ethyl mercuri-thiosalicylate was most valuable of these, germicidically. Journal for Bacteriology, 1931, volume 21, pages 323-329. J. G. Waldo, H. A. Shonle and H. M. Powell.

Protection Against Depilatory Irritation

Two interesting compositions protecting skin against irritations sometimes caused by depilatories are: Anhydrous adeps lanae 30 parts, 90 parts of camphorated soap liniment, perfumed with oil of lavender. Another contains 28 parts of bitter almond oil, 60 parts of zinc oxide, 15 parts of pulverized talc, 60 parts of cold cream. Zinc oxide is triturated with oil of bitter almonds and set aside in warm spot for 24 hours. Then talc is added and mixture again triturated with cold cream. Pharm. Zentrallhalle through Der Parfuemeur, 1930 page 750.

Hydrogen Peroxide in Cod Liver Oil

Tests carried out on olive oil, linseed oil and cod liver oil, have shown that crude cod liver oil contains a certain amount of active oxygen or peroxide. Irradiation up to a maximum of 20 hours increased the peroxidation. After 20 hours, the quantity of active oxygen decreases. Presence of oxygen in the oil is supposed to indicate that oil can act as a catalyst in instituting oxidation of other substances. This one of reasons for its therapeutic properties. P. Delore. Comptes rendues Societe Bilolog, 99, 1743.

Characterization of Vitamin A

There are two parts to this article, one concerned with spectrosopic evidence and the other with biological experiments. Diet experiments were carried out with rats and cats. Carotene was used. Experiments suggested that a large proportion of the carotene absorbed into the organism may be rapidly transformed into other substances, but that the formation

of vitamin A is relatively a slow process, possibly concerning quite a small proportion of the assimilated pigment. B. Ahmad and J. C. Drummond. Journal of the Society of Chemical Industry, 1931, pages 183 to 186T.

Chamomile Hair Oils

Chamomile flowers are moistened with same quantity of alcohol with addition of approximately 25% of ether, and allowed to remain in warm spot for 24 hours. Then 10 times the weight of chamomile in fatty oils is added, such oils as peanut, olive, and soy bean being used. Then the mass is heated on steam bath until all ether and alcohol have been evaporated. Mass is pressed and passed through filter heated with hot water. Few drops of essential oil of chamomile are added. A second formula calls for 700 parts of peanut oil and 280 parts of castor oil, mixture being colored with fat soluble chlorophyll to light green. Finally 20 to 25 parts of essential oil of chamomile are added. Half of this addition may be replaced by chamomile extract. Der Parfuemeur, 1931, page 300.

Removal of Comedones

Removal of these disfiguring eruptions on face can be effected with acid preparations, most of which contain acetic acid. Formula calls for 10 parts of 6% acetic acid, 20 parts of glycerin and 30 parts of kaolin. Following composition may be used for preventing pimples on face: 17 parts of dried egg albumen, 8 parts of alum, 62 parts of distilled water, 3 parts of tincture of benzoin, 8 parts of bitter almond oil and 2 parts of perfume. Oxygen preparations may also be used as well as aqueous preparations containing hydrogen peroxide and acetic acid. H. Schwarz, Der Parfuemeur, 1931, page 300.

Notes On Hydrogen Peroxide

Hydrogen peroxide must be sold in bottles the glass of which does not contain a high proportion of alkali. Cosmetic formulae, calling for hydrogen peroxide with alkali, are wrong unless they specify that preparation should be used immediately after compounding. Addition of ammonia to hydrogen peroxide results in formation of ammonium chloride with hydrochloric acid, and then the residual ammonia acts to liberate oxygen from preparation. Addition of formaldehyde to hydrogen peroxide, particularly in preparation of medicaments for alleviating foot perspiration is bad practice, for hydrogen peroxide oxidizes formaldehyde to formic acid. Use of hydrogen peroxide, which contains hydrochloric acid as a preservative, for mouth washes is also to be avoided, for acid will injure teeth. Use of acetanilid is also decried for reason that this is subjected in course of time to oxidation and nitrobenzene is formed. Attention is called to fact that certain new preservative agents, the esters of paraoxybenzoic acid and particularly methyl paraoxybenzoate, are well suited for preserving hydrogen peroxide. H. Schwarz. Der Parfuemeur, 1931, page 331.

Peroxide of Hydrogen Mouth Washes

It is easy to cause irritations by using 30% hydrogen peroxide, as it comes on the market, and the user must therefore know just how to dilute it to proper strength. A good formula for such a preparation calls for 5 parts of ordinary hydrogen peroxide, 1½ parts of camphor, 180 parts of alcohol, 2 parts of anise oil and 2 parts of eucalyptus oil. Thymol and saccharin may also be used. Good results have also been obtained by mixing equal parts of hydrogen peroxide and 96% alcohol. It should be remembered that only anethol, ansiol, boryl acetate, eucalyptol, eucalyptus oil, pine needle oil, star anise oil and thymol can be used to perfume preparations containing hydrogen peroxide and remain unchanged. Apotheker Ztg.

Spirits of Camphor

Owing to natural variations in optical rotation of camphor, determination of camphor in spirits of camphor by this means is inaccurate unless rotation of camphor used be known. From a number of determinations of specific gravity and refractive index of spirits of camphor, prepared to contain different percentages of camphor and with alcohol of varying concentration, it is shown that former factor is better criterion. Allowing for a variation in camphor content of from 9.5 to 10.5% weight/volume and in alcohol concentration from 89 to 91% weight/volume, the possible variations are density at 15.5°C. 0.8438 to 0.8503, index of refraction at 20°C. 1.3746 to 1.3759. Since increase of water content increases density but reduces index of refraction, while loss of camphor decreases both, a combination of the two determinations affords a useful means of testing. F. H. Milner, Quarterly Journal of Pharmacy, volume 3, 338-341.

Determination of Morphine

This article is concerned with determination of morphine in presence of other opium alkaloids. An official Danish preparation contains morphine, narcotine, codeine, and papaverine hydrochlorides and is called tetrapon. Latter is used in a 0.4 gram sample and is dissolved in 20cc. of water, and 4 cc. of 2N solution of sodium hydroxide is twice extracted with mixture of 10 cc. of chloroform and 30 cc. of ether and once with 10 cc. of chloroform. The combined extracts contain coloring matter, chrysoidine and all the alkaloids except morphine. Addition of one gram of ammonium chloride to aqueous layer liberates morphine, which is extracted with isopropyl alcohol-chloroform. H. Baggesgaard-Rasmussen and F. Reimers. Dansk Tids. Farm., 1931, volume 5, 21-34.

Chrysophanic Acid Chrysarobin and Sulphur

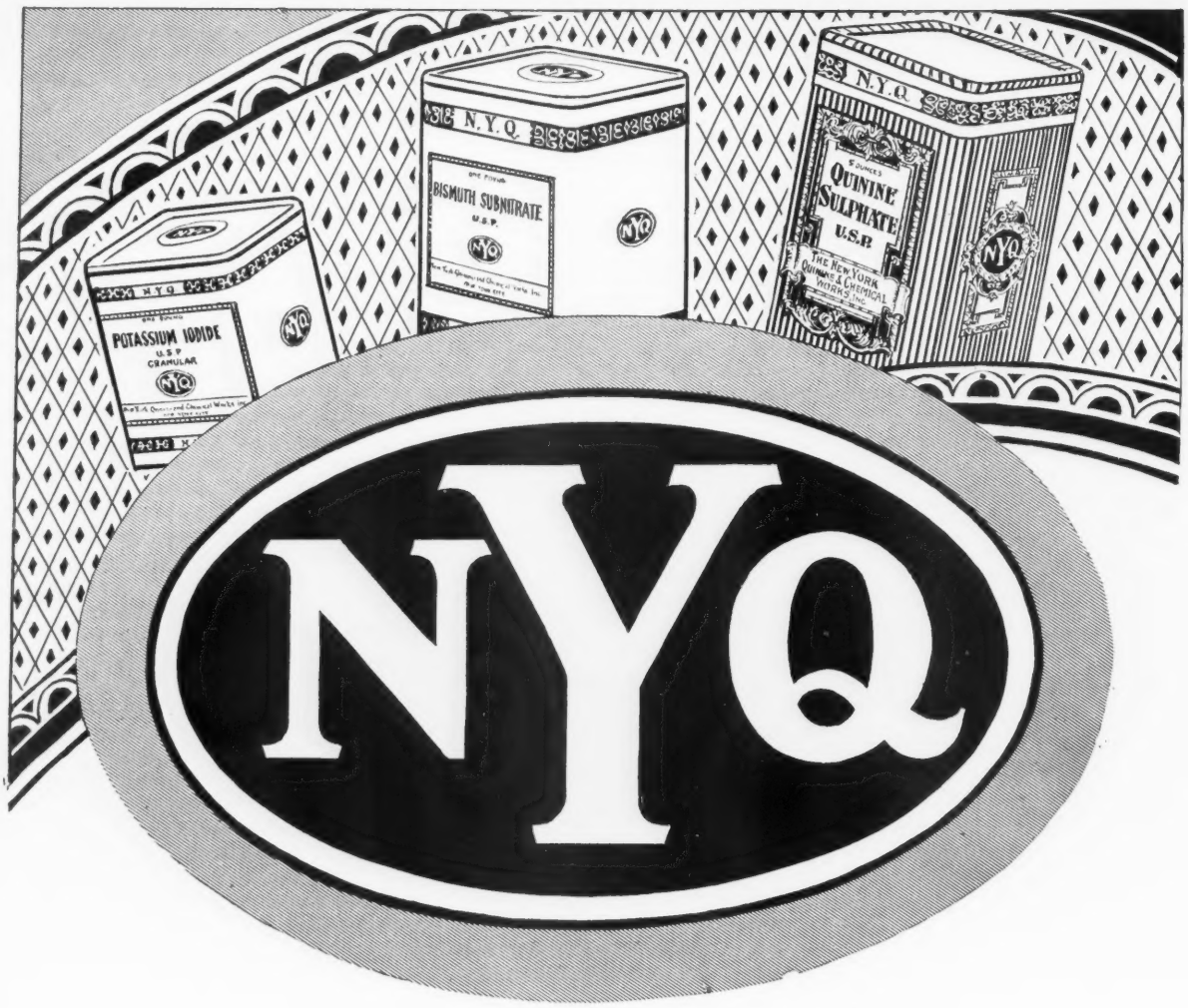
To detect chrysarobin in chrysophanic acid 0.25 to 0.30 gram of product is heated gently with 0.1 gram of sulfur until evolution of gas begins and for a few seconds longer. In presence of 15% or more of chrysarobin a green coloration is produced. Addition of chloroform gives an intensely green coloration. Reaction is given by fractions of chrysarobin soluble and insoluble in potash solutions of at least 2% but not by fraction soluble in 1% potash and reprecipitated from its potash solution by sulfuric acid. Test is applicable to chrysarobin pomades. R. Huerre, Jor. Pharm. Chim., volume 12, Eighth Series, pages 145-149.

Vanadium Compounds in Medicine

Three important uses are described for these compounds, namely as an antiseptic and stimulant on the skin, as a chemotherapeutic agent in syphilis and as a catalyst or oxygen promoter. Solutions of vanadium oxychloride are found in the first class, these solutions being made in a strong solution of sodium chlorate. The product is used as an antiseptic and stimulant on the skin and the mucous membranes, including the bladder, the vagina and uterine canal, for ulcers, superficial absesses and infected wounds. Powders of vanadic acid, 1%, with bismuth subgallate and sodium chlorate or sodium perborate are used as dusting applications to replace iodoform. Chemical Trade Journal and Chemical Engineer, 1931, page 514.

Organic Compounds of Gold

An investigation has been made of conditions surrounding formation of gold compounds, which, while they are substitutes for guaiacol, would also have advantageous properties, such as solubility in water, relatively low toxicity, etc. The following substances were obtained: -a compound composed of thioguaiacol and gold chloride, a compound composed of thioguaiacol and auric oxide, one of thioguaiacol and aurous oxide, xanthogene -3-methoxy-4-benzoic acid, carboxythioguauaicol, a compound composed of carboxythioguauaicol and gold chloride, one between the same organic compound and aurous oxide and another with auric oxide. Several others are described. Z. Ledochowski. Bulletin of the Works of the Department of Chemistry of the State University of Hygiene in Warsaw, Poland.



Acetanilid	Cinchonidine	Quinidine
Bismuth Subnitrate	Morphine Sulphate	Thymol
Bismuth Subcarbonate	Ethyl Morphine	Salicylates
Cinchonine	Iodoform	Strychnine
Cinchona Alkaloids	Glycerophosphates	Bromide of Soda
Cinchophen	Opium	Bromide of Potash
Codeine Sulphate	Potassium Iodide	Bromide of Ammonia
Codeine Phosphate	Quinine Sulphate	Silver Salts

Menthol-Y (trade mark reg.) Vanillin

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The range of price given is not "bid and asked," but are prices of different sellers, based on varying grades and/or quantities. Containers named are original packages most commonly sold.

Chemicals

Acetanilid
Hyoscyamine Alk.

Acetanilid, USP, 200 lb bbls..lb.	.24	.25
Acetone, pure 350 lb drs wks..	.12	.14
Acetphenetidin, 225 lb bbls..lb.	1.25	1.30
ACID, Acetylsalicylic, 225 lb ....bbls.	.85	.90
Agaric, 1 oz vials.....oz	...	3.50
Arsenous, USP, 220 lb bbls lb.	...	.18
Benzoic, USP, 100 lb bbls.lb.	.60	.61
Boric, 300 lb bbls.....lb.	.09½	.10
Cacodylic, 5 lb. bot.....lb.	...	8.00
Camphoric, USP, VIII 1 lb bot.....lb.	4.82	4.82
Carbolic, USP, crys 112 lb tins.....lb.	.17	.18
Cinnamic, 5 lb cans.....lb.	3.25	3.50
Citric, USP, crys 230 lb bbl .....lb.	...	.35
USP, crys imp. 112 lb keg .....lb.	.41	.43
USP, powd 200 lb bbl..lb.	...	35½
Gallic, USP, 150 lb bbls..lb.	...	.74
Glycerophosphoric, 25% 1 lb bot.....lb.	1.40	1.75
Hydriodic, USP, 10% 5 lb bot.....lb.	...	.70
Hydrobromic, USP, 40% 155 lb. cbys.....lb.	...	.55
Hypophosphorous, USP, 30% .....lb.		
5 gal demis.....lb.	...	.85
Lactic, USP, VIII 100 lb cbys lb.....	.53	.59
USP, X 100 lb cbys.....lb.	.57	.59
Phenylcinchonic.....lb.	...	3.25
Phosphoric, USP, Syr 70 lb drs.....lb.	.14	.15
Pyrogallic, crys 5 lb cans..lb.	1.30	1.40
Resublimed, 5 lb cans...lb.	1.60	1.70
Salicylic, USP, 100 lb bbls.lb.	.40	.45
Stearic, double pressed, bags .....lb.	.09	.10
Triple pressed, bags,....lb.	.12	.13
Succinic, 100 lb bbls.....lb.	...	1.35
Sulfurous, USP, 6% 100 lb cbys.....lb.	.05	.06
Tannic, USP, fluffy 50 lb bbls. .....lb.	.90	.93
Powd 200 lb bbls.....lb.	.80	.85
Tartaric, USP, 300 lb bbls.lb	.27½	.28½
Aconitine, Alk, crys 1 oz vials .....oz.	...	30.00
Amorphous, 1 oz vials....oz.	...	20.00
Adeps Lanae, hyd 350 lb bbls lb.	.13	.15
Anhydrous, 350 lb bbls....lb.	.14	.16
Agaricin, 1 oz vis incl.....oz.	...	2.32
ALCOHOL, Benzyl, 5 lb bot lb.	1.20	1.35
Ethyl, USP, 190 pf 50 gal bbls.....gal.	...	2.56
Grain U. S. P. bbls....gal.	...	2.61
Pure tax free drums...gal.		
Ethyl.....	...	.42
Grain.....	..	.47
Denatured, (drums included) add 5c for bbls.		
No. 1 spec.....gal.	.27	.35
No. 5 comp.....gal.	.28	.36
23 a, spec.....gal.	.30	.38
39 b, spec.....gal.	.33	.47
40 m. spec .....gal.	.28½	.42½
Isopropyl refd 98-99% drs. incl.....gal.	.55	.60
Phenylethyl, 1 lb bot.....lb.	4.30	4.50
Aloin, USP, 100 lb cases....lb.	1.51	1.55
Aluminum Acetotartrate kegs .....lb.	...	1.60
Amidipyrine, 10 lb boxes....lb.	4.00	4.10
AMMONIUM, Acetate 100 lb kegs.....lb.	.38	.40
Benzoate, USP, 1 lb bot...lb.	...	1.27
Borate, 10 lb bot.....lb.	...	.35
Bromide, USP, 450 lb bbls.lb.	.38	.39
Imported, 112 lb boxes..lb.	.39	.41
Carb, USP, lump 100 lb kegs .....lb.	...	.13½
USP, powd 100 lb kegs..lb.	...	.14½
Citrate, 100 lb kegs.....lb.	.90	1.30
Ichthyolate, as to brand..lb.	4.00	4.50
Iodide, USP, 25 lb jars...lb.	...	5.20
Phosphate, dibasic 250 lb bbls .....lb.	.48	.50
Salicylate, USP, 100 lb kegs .....lb.	1.15	1.20
Valerate, USP, 25 lb jars...lb.	2.75	2.90
Amylene Hydrate, 1 lb bot..lb.	...	7.10
Antipyrine, USP, 100 lb cans.lb.	2.25	2.60
Apomorphine Hydrochloride, ½ oz. vials.....oz.	22.60	22.70
Arecoline Hydrobrom, 1 oz vials .....oz.	5.25	5.35
Aspidospermine Amorphous.oz.	...	15.00
Atropine Alk, USP, 1 oz. vials .....oz.	6.50	7.00
Methyl bromide, 1 oz vials.oz.	...	25.00
Sulfate, 5 oz cans.....oz.	...	2.50
Single ounce.....oz.		3.00
Barbital, 1 lb bot.....lb.	4.00	4.35
Barium Iodide, 5 lb box.....lb.	...	5.15
Sulfate, X-ray diagn bbls..lb.	.09½	.10
BAY RUM Porto Rico, 45 gal. bbls.....gal.	.75	.80
Domestic syn. 50 gal bbl..gal.	.70	.75
St. Thomas, 50 gal bbls...gal.	.80	.90
Benzonaphthol, 5 lb boxes...lb.	2.50	2.60
Benzoyl Cholride, 500 lb dr..lb.	1.00	1.05
Benzyl Benzoate, Medicinal FFC.....lb.	1.20	1.40
Chloride Redis, 160 lb cby.lb.	.30	.35
Formate, 1 lb bot.....lb.	3.25	3.50
Succinate, 160 lb cby.....lb.	...	5.25
BISMUTH, metal 100 lb cases .....lb.	...	1.40
Ammon. Citrate, USP, 5 lb cans.....lb.	...	3.25
Betanaphtholate, 5 lb box.lb.	...	2.90
Citrate, USP, 5 lb cans....lb.	...	2.60
Chloride..... .....lb.	...	3.00
Hydroxide.....lb.	...	2.90
Nitrate, 25 lb jars.....lb	...	1.25
Oxide anhydrous.....lb.	...	3.25
Oxychloride, 25 lb boxes...lb.	...	2.95
Salicylate, 25 lb boxes....lb.	...	1.65
Subcarbonate, USP, 25 lb boxes.....lb.	1.70	1.75
Subcarbonate, X-ray diag 1 lb. bot.....lb.	2.65	2.72
Subgallate, USP, 25 lb boxes .....lb.	1.75	1.80
Subiodide, 5 lb lots.....lb.	...	4.10
Subnitrate, USP, 25 lb jar.lb.	1.50	1.55
Subsalicylate, USP, 25 lb boxes.....lb.	2.55	2.60
Tannate.....lb.	...	2.30
Borax, crys USP, 400 lb bbls.lb.	...	.06
Bromoform, USP, 5 lb bot cases .....lb.	1.65	1.90
Butylchloral Hydrate bot....lb.	4.00	5.00
Cadmium iodide, 10 lb bot...lb.	...	4.55
CAFFEINE Alk, USP, 1..... 100 lb kegs.....lb.	2.45	2.50
Citrated, 50 lb cans.....lb	2.20	2.45
Hydrobromide, 1 lb bot...lb.	4.80	5.00
Hydrochloride, 1 lb bot...lb	6.05	6.55
Sulfate, 1 lb bot.....lb.	5.40	5.90
Sodium Benzoate, tins....lb.	...	3.05
Salicylate, tins.....lb.	...	2.95
Calcium Bromide, 100 lb cs..lb.	...	.60
Carb, USP, 175 lb bbls....lb.	.05	.06
Glycerophos, 250 lb bbls...lb.	...	1.05
Hypophos, USP, 25 lb cans lb.	.55	.60
Iodide, 5 lb bot.....lb.	...	4.85
Lactate, USP, 500 lb bbls lb.	.45	.50
Lactophosphate Soluble...lb.	...	1.20
Powdered tins.....lb.	...	1.00
Insol, powd tins.....lb.	...	.50
Phosphate & Sulfate Tooth Paste grade, Works..lbs.	.03	.06
Sulfide, USP, 100 lb drs...lb.	.21½	.24
CAMPHOR, Jap. ref. slabs 100 lb. cases.....lb.	.54	.55
Refined powd.....lb.	.55	.56
½ oz tab, 100 lb cases....lb.	.67	.68
Liniment, bbls.....gal.	2.20	2.30
Monobrom, 100 lb cases...lb.	1.85	1.90
Casein edible, 100 lb kegs...lb.	.45	.55
Charcoal Animal medicinal jars incl.....lb.	...	.50
Charcoal Wood, powd, 100 lb. bbls.....lb.	.06	.07
Chloral Hydrate, USP, 25 lb iars.....lb.	.78	.80
100 lb drums.....lb.	.73	.75
Cholesterin.....oz.	5.50	5.85
Chloroform, USP, 50 lb drs...lb.	.25	.27
Chlorophyll, 1 lb. bot.....lb.	2.12	2.30
Chromium Sulfate Scales, tins .....lb.	.45	.50
Powdered tins.....lb.	.50	.55
Chrysarobin, 50 lb tins.....lb.	3.75	4.10
Cinchonine Alk, 100 oz tins.oz.	...	.34
Crystal.....oz.	.43	.46
Sulfate, 100 oz tins.....oz.	...	.23
Cinchonidin Sulfate, 100 oz tins .....oz.	.32	.35
Cincophen, U.S.P. bbls.....lb.	3.25	...
boxes, drms., kegs.....lb.	3.35	3.50
Cocaine Alk, USP, 1 oz vial..oz.	...	11.07
Hydrochloride, USP,.....oz.	...	8.50
CODEINE Alk, 1 oz vials, 10 lots.....oz.	...	10.52
Hydrobromide.....oz.	...	8.92
Hydrochloride.....oz.	...	9.52
Nitrate, oz vl 10 oz lots....oz.	...	9.80
Phosp. oz vl, 10 oz lots....oz.	...	7.92
Salicylate.....oz.	...	8.25
Sulfate, oz vl, 10 oz lots...oz.	...	8.42
Colchicino Alk, USP, 1 oz vl.oz.	...	20.00
Salicylate, 1 oz vls.....oz.	...	35.50
Cream Tartar, USP, 300 lb bbls .....lb.	.22½	.22½
Imp. powd. 224 lb bbls....lb.	.22½	.23
Creosote, USP, 42 lb cbys....lb.	.45	.47
Carbonate, 150 lb.....lb.	1.50	1.60
Cresol, USP, 400 lb drums...lb.	...	.20
500 lb drums.....lb.	.14	.17
DIGITALIN Pure, 1 oz vial.oz	15.00	15.50
Dover's Powder, USP, 5 lb tin .....lb.	2.75	2.80
Duboisine Sulfate, 1 oz vl....oz.	35.00	40.00
Emetine Alk, 15 gr vial.....oz.	...	.85
Hydrochloride, USP, 1 oz vl .....oz.	25.00	26.00
15 grain vials.....oz.	2.50	2.70
Ephedrine, alk. 25 oz. tins,..oz.	2.90	3.45
Hydrochloride, 25 oz. tins, oz.	2.25	2.70
Sulfate, 25 oz. tins.....oz.	2.25	2.70
Epsom Salts, USP, 200 lb bbls .....100 lb.	2.25	2.50
Imp. 100 lb bbls.....100 lb.	2.30	2.35
Ergotin Bonjean, 1 lb jars...lb.	18.50	19.00
Eserine Alk, 1 oz vials.....oz	...	50.00
Salicylate, 1 oz vials.....oz.	..	40.00
Sulfate, USP, VIII 1 oz vials .....oz.	...	40.00
ETHER, USP, 55 lb drums..lb.	...	.11
Anaesthesia, 55 lb drums..lb.	.21	.23
Nitrous, 1 lb bot.....lb.	...	.80
Ethyl Chloride, 200 lb bot...lb.	.22	.24
Ethyl Iodide, 5 lb bot.....lb.	...	6.25
Formaldehyde, USP, 100 lb cbys lc-l wks.....lb.	.07	.07½
Gall Extract.....lb.	.20	.21
GLANDULAR SUBSTANCES Duodenal Substance, 1 lb lots	...	5.50
Liver Substance (Hepatic) 1 lb lots.....oz.	...	4.50
Orchic Substance (Testicular)	...	4.75
Ovarian Substance, whole, 1 lb lots.....oz.	...	26.00
Ovarian Residue, 1 lb lots....	...	20.00
Pituitary Substance, whole 1 lb lots.....oz.	...	40.00
Pituitary Substance, Anterior Lobe, 1 lb lots.....oz.	...	27.00
Thyroid, U. S. P., 1 lb lots...	...	4.75
Oxgall Powder, 1 lb lots.....	...	1.35
GLYCERIN, CP, 550 lb drums .....lb.	...	11½
Gold Chloride, bottles.....oz.	12.00	12.50
Guaiacol, liq. USP. 100 lb cbys.....lb	1.65	1.75
Crystals.....lb	2.25	2.50
Benzoate, 1 lb bottles.....lb.	...	13.00
Carbonate, 5 lb boxes.....lb.	1.70	2.50
Halazone, 5 lb bot.....lb.	2.75	3.25
Hexamethylenetetramine, USP, 100 lb dr.....lb.	.46	.47
Homatropine Hydrobrom USP. .....oz.	...	14.50
5 oz and 1 oz vials.....oz.	...	13.50
Hydrastine Alk, USP, 1 oz vial .....oz.	20.50	21.00
Hydrochlide, USP, 1 oz vials .....oz.	20.50	21.00
Sulfate, 1 oz vial.....oz.		
Hydrastinine Hydrochloride, USP, 15 gr vials.....oz.	22.50	23.00
Hydrogen Peroxide, USP, soln 375 lb bbls.....lb.	...	40.00
Hyoscine Hydrobrom, USP, 1 oz vials.....oz.	.03½	.04½
5 oz, 1 oz vials.....oz.	...	35.00
Hyoscyamine Alk, crystals, 1 oz vials.....oz.	13.07	13.57
Amorphous, 1 oz vial...oz.	...	25.07
	...	75.07

Hydrobromide, USP, 1 oz vial oz.	...	25.00
Sulfate, 1 oz vial oz.	...	25.07
Hypoquinone, 100 lb kegs lb.	...	1.10
ICHTHYOL, tins lb.	4.00	4.25
Iodide Arsenous, 5 lb bot lb.	...	5.20
Arsenous-Mercuric soln, 5 lb bot ql	...	.26
Iodine, crude, 200 lb kegs lb.	4.35	4.35
Resublimed, 10 lb tars lb.	4.65	4.70
Tincture demis gal.	...	4.85
Iodoform, powd 10 lb bot lb.	...	6.50
Iron & Ammonium Citrate, USP, 50 lb cans lb.	.65	.66
Chloride, USP, lump 400 lb bbls lb.	.06	.08
Citrate, USP, VIII 25 lb can lb.	.94	.99
Hypophosphite, 5 lb cans lb.	1.55	1.65
Iodide, 1 lb bottles lb.	...	4.28
Phosphate, USP, 50 lb cans lb.	...	.69
& Potas Oxalate, 250 lb bbl lb.	...	.45
Pyrophosphate, USP, 50 lb lb.	.74	.80
& Sod Oxalate, 50 lb cans lb.	...	.30½
Sulfate, USP, crys bbls lb.	.04	.04½
Ferrous dried bbls lb.	...	.08
Valerate, tins lb.	2.75	3.00
Jalap Resin, USP lumps, 5 lb tins lb.	...	4.00
Powdered, tins lb.	...	4.65
Lead Acetate, USP, 100 lb kegs lb.	.16½	.19½
Iodide, USP, VIII 5 lb bot lb.	3.20	3.40
Lecithin, 5 oz jars oz.	1.00	1.30
Licorice Ext Mass, cases lb.	.19	.20
Compound powder, bbls lb.	.11	.13
LITHIUM CARBONATE, 250 lb bbls lb.	1.35	1.45
Citrate, USP, 100 lb kegs lb.	...	1.70
Iodide, 5 lb bottles lb.	...	5.65
Lobeline Sulfate, ¼ oz vial oz.	...	8.75
Magnesium Carbonate, USP, 100 lb bbls lb.	.08	.09
English, oz blocks oz.	.16	.18
Glycerophosphate, 5 lb tins lb	3.20	3.25
Hypophosphite, 5 lb cans lb.	1.15	1.20
Salicylate, 100 lb kegs lb	...	1.10
Stearate, bbls lb.	.23	.25
Manganese Glycerophosphate, 5 lb tins lb.	2.90	3.00
Hypophosphite, USP, VIII 5 lb cans lb.	1.35	1.40
Iodide, 1 lb bottles lb.	6.40	6.65
MENTHOL, USP, 60 lb cases lb.	3.75	4.00
Synthetic, cases lb.	3.00	3.10
Mercury Metal, 75 lb flasks fl.	85.00	87.00
Bichloride, crys 25 lb box lb.	...	1.36
Gran powd, 100 lb kegs lb.	...	1.21
Bisulfate, 25 lb boxes lb.	...	1.48
Blue Mass, 25 lb boxes lb.	...	.95
Powd, 25 lb boxes lb.	...	.96
Blue Ointment, USP, 30%, 25 lb cans lb.	...	1.19
Mild 30%, 25 lb cans lb.	...	.86
33 1/3% mercury lb.	...	.94
Calomel, 50 lb boxes lb.	...	1.75
English lb.	2.65	2.75
Iodide, green, 25 lb jars lb.	...	4.80
Red, USP, 25 lb jars lb.	...	4.89
Yellow, USP, VIII, 25 lb jars lb.	4.80	4.80
Red precip Powd. USP, 25 lb boxes lb.	...	1.90
White precip, Powd., USP, 25 lb. boxes lb.	...	1.85
Salicylate, 25 lb bot lb.	...	2.32
With chalk, USP, 25 lb boxes lb.	...	.93
Methanol, Pure 1c-1 drs gal	...	.44
Methyl Salicylate, USP, 50 lb cans lb.	.40	.42
Methylene Blue, USP, med 5 lb cans lb	2.00	2.05
Milk powd, 150 lb bbls lb.	.09	.12
MORPHINE Alk, 5 oz tin oz.	10.90	10.95
Acetate, 5 oz tins oz.	8.75	8.80
Hydrobromide, 5 oz tins, 10 oz lots oz.	8.75	8.80
Hydrochloride, 5 oz tins, 10 oz lots oz.	8.75	8.80
Ethyl Hydrochloride, 5 oz tins 10 oz lots oz.	...	10.85
Sulfate, 5 oz tins, 10 oz lots oz.	7.85	8.00
Naphthalene Flake, 175 lb bbls wks lb.	.04½	.05
Balls, 250 lb bbls wks lb.	.05½	.06
Oxgall, Purified, 5 lb bot lb.	1.75	2.50
USP, 5 lb bot lb.	2.00	2.50
Oxyquinoline Sulfate, tins lb.	8.50	9.25
Pancreatin, USP, 100 lb lb.	...	1.90
Paraffin, refd, 200 lb cs slabs 118-120 deg MP lb.	.08	.09
128-132 deg MP lb.	.07½	.07½
Para-Aldehyde, USP, 100 lb carboys lb.	.48	.50
Pepsin, USP, 100 lbs. 1:3000 lb.	...	2.25
100 lbs. 1:6000 lb.	...	4.00
100 lbs. 1:10000 lb.	...	6.50
Peptone, powd, 5 lb bot lb.	...	...
PHENOBARBITAL, U. S. P., 1 lb. bot lb.	9.50	10.00
Phenolphthalein, U. S. P. 100 lb drums lb.	.80	.82
5 lb cans 100 lb lots lb.	.88	.93
Pilocarpine Hydrochloride, USP, 1 oz vials 25 oz lots oz.	...	3.25
Nitrate, 25 oz lots oz.	...	3.25
Single ounce oz.	...	3.50
Alkaloid, 15 gr vials vl.	...	.75
Piperadine, 25 oz bottles lb.	...	8.00
Popodhyllin 5 lb bottles lb.	4.35	4.50
Potassium Acetate, USP, 100 lb kegs lb.	.29	.30
Bicarb, USP, crys 320 lb bbls lb.	.09½	.10
Bromide, USP, crys 100 lb cs lb.	.34	.35
Citrate, USP, 50 lb bbl lb.	.42½	.43
Guaiacol Sulfonate lb.	1.95	2.25
Potassium Hypophosphite, 10 lb. cans lb.	.75	.80
Iodide, USP, 100 lb cases lb.	3.50	3.55
Lactophosphate, 4 ox bot lb.	...	.90
Permangan, USP, crys, 100 lb drs wks lb.	.15	.15½
Phosphate dibasic pure, kegs lb.	...	.49
Salicylate, 25 lb cans lb.	...	1.18
Sulfate, USP, VIII, 100 lb kegs lb.	.13	.15
Sulfocyanide, CP 15 lb jars lb.	...	.50
Tartrate, CP, tins lb.	...	.65
Pyrogallol, USP, see Acid Pyrogallic	...	...
Quinidine Alk, 100 oz tins oz.	.63	.68
Sulfate, 100 oz tins oz.	...	.45
QUININE SULFATE, USP, 100 oz tins oz.	...	.36
1 oz tins, 100 oz lots oz.	...	.46
Acetate oz.	...	.72
Arsenate oz.	...	.72
Benzoate oz.	...	.73
Bisulfate, USP oz.	...	.36
Citrate oz.	...	.46
Dihydrobromide oz.	...	.50
Dihydrochloride, USP oz.	...	.50
Ethyl Carbonate, 16 oz tins oz.	...	.54
Ferrocyanide oz.	...	.73
Formate oz.	...	.67
Glycerophosphate oz.	...	.86
Hydrobromide, USP oz.	...	.45
Hydrochlorosulfate oz.	...	.50
Hypophosphite oz.	...	.65
Lactate oz.	...	.66
Phenolsulfonate oz.	...	.78
Phosphate oz.	...	.55
Salicylate, USP oz.	...	.48
Tannate, USP oz.	...	.39
Tartrate oz.	...	.73
Valerate oz.	...	.78
Urea Hydrochloride, USP oz.	...	.52
Rennet, N. F. 5 lb 1:25,000 lb.	2.95	3.50
Resorcinol, USP, 25 lb cans lb.	1.57	1.65
Rochelle Salt, USP, 225 lb bbl lb.	.17½	.18½
Rock Sugar, 5 lb boxes lb.	...	.15
Saccharin, USP, 10 lb cans lb.	1.70	1.80
USP, Soluble, 10 lb cans lb.	1.75	1.85
Salicin, USP lb.	...	12.50
SALOL, USP, 100 lb drums lb.	...	.90
Saltpetre, powd, bbls wks lb.	.06½	.08¼
Santonin, USP, bulk lb.	123.00	133.00
Saponin, refined lb.	1.30	1.50
Siedlitz Mixture, 250 lb bb. lb.	.14	.14½
Silver Metal, American oz.	...	.42¾
Iodide, 16 oz lots oz.	...	.69
Nitrate, 100 oz bottles oz.	.22	.23
Nucleinate, bulk oz.	...	.37
Proteinate oz.	.39	.41
SODIUM BENZOATE, USP, 100 lb bbls lb.	.44	.48
Bromide, USP, 100 lb kegs lb.	.34	.35
Cacodylate, USP, 25 lb bot lb.	4.75	5.90
Citrate, USP, X 50 lb kegs lb.	.34½	.36
USP VIII, 50 lb kegs lb.	.29½	.31
Glycerophosphate, N F, crys 25 lb cans lb.	1.27	1.33
Powder, 25 lb tins lb.	1.32	1.38
Soln, USP, 25 lb tins lb.	1.05	1.15
Hypophosphite, USP, 25 lb cans lb.	.60	.65
Iodide, USP, 25 lb jars lb.	4.25	4.30
Phosphate (Mono-Sodium), 100 lb kegs lb.	.30	.31
Di-Sodium USP, granular, 275 lb bbls lb.	.07½	.08
Pyrophosphate, 100 lb kegs lb.	...	.29
Salicylate, 100 lb kegs lb.	...	.47
Sulfocarbolate, USP, 100 lb kegs lb.	...	.25
Sulfocyanate, CP crys, jars included lb.	...	.60
Spartein Sulfate, USP, 25 oz bulk oz.	.65	.70
Single oz vial oz.	.77	.90
STRONTIUM BROMIDE USP, 50 lb kegs lb.	.46	.47
Carb, 100 lb kegs wks lb.	...	.20
Iodide, USP, 25 lb jars lb.	...	4.00
Lactate, kegs lb.	.90	1.10
Nitrate, 600 lb bbls NY lb.	.08	.08½
Imp. bbls NY lb.	.08	.08½
Salicylate, USP, 100 lb keg lb.	...	1.10
Strophanthin, USP, 1 oz vial oz.	19.00	19.00
Crystals lb.	75.00	75.00
Strychnine Alk, USP crys, 100 oz tins oz.	...	.61
Powdered oz.	...	.51
Acetate oz.	...	.65
Arsenate, 25 oz cans oz.	...	.65
Glycerophosphite, USP oz.	...	.65
Hydrobromide oz.	...	.65
Hydrochloride oz.	...	.65
Hypophosphite oz.	...	.75
Nitrate, USP oz.	.55	.72
Phosphate oz.	...	.65
Sulfate, USP, powd oz.	...	.42
Sugar, refined, 275 lb bbl 100 lb	5.80	5.90
Milk, USP, 200 lb bbls lb.	.18	.20
Sulfonethylmethane, USP, 10 lb boxes lb.	3.85	4.05
Sulonmethane, USP, 10 lb box lb.	2.65	3.85
Sulfur flwrs. washed, USP, 125 lb bbl lb.	...	.06
Iodide, USP, VIII, 5 lb bot lb.	...	4.55
TARTAR EMETIC, USP, 300 lb bbls lb.	.29	.31
Terebene, tins lb.	...	.85
Terpin Hydrate, USP, 100 lb kegs lb.	.35	.37
Theobromine Alk, 5 lb cans lb.	1.90	2.25
Sod. Salicylate, 1 lb bot lb.	...	2.10
Sod. Benzoate, 1 oz vials oz.	...	1.00
Thymol, USP, 25 lb tins lb.	1.65	1.90
Iodide kegs lb.	6.00	7.00
Veratrine Alkaloid oz.	...	2.25
Sulfate, 1 oz vials oz.	...	2.25
Witch Hazel Ext., 50 gal bbl gal.	.60	.80
Zinc Carb, USP, 100 lb keg lb.	.28	.31
Chloride, USP, 25 jars ex lb.	.24	.29
Iodide, 5 lb bottles lb.	...	5.22
Oxide, USP, 100 lb bbls lb.	.13	.14
Stearate, USP, 50 lb bbl lb.	.18	.20
Sulfate, USP, 100 lb bbl lb.	.08	.09
Sulfocarbolate, 100 lb kegs lb.	.23	.26

Miscellaneous

Castor Oil, odorless, bbls lb.	...	.13½
Chalk drop, 175 lb. bbls lb.	...	.03¾
Precip. light, 250 lb. cask lb.	...	.04¾
Heavy 540 lb. casks lb.	...	.02½
Bulk ton	...	5.00
English light, bags lb.	...	.04¾
English light, casks lb.	.05½	...
Cocoa Butter, 12 lb. box lb.	.42	.45
Cod Liver Oil Nor. 30 gal. bbls	30.00	31.00
Newfoundland bbl.	...	31.00
Collodion U. S. P. 30 lb. dr lb.	...	.23
Corn Syrup 42° 50 gal. bbl. 100 lb.	3.91	4.16
Gelatin, USP, Silver 100 lb. cases lb.	.55	.60
Pure Food, 50 lb. bbl lb.	.53	.55
Glucose, (grape sugar) dry 70° bags c-l NY 100 lb.	3.14	3.24
Haarlem Oil, bot 6 gross cases gross	...	3.75
Imported, 5 gr. cs gross	...	3.50
Kaolin, Bags lb.	.06	.08
Colloidal Grade 200 lb. tin lined wooden drums lb.	.15	.29
Mineral Oil White, 50 gal. bbls. 80-85 vis gal.	.45	.50
85-90 vis gal.	.65	.70
125-130 vis gal.	.75	.85
290 vis gal.	.80	.90
Russian 110-115 vis gal.	.69	.79
145-155 vis gal.	.70	.75
320-330 vis gal.	.80	.90
Olive Oil, Edible bbls gal.	1.55	1.65
Paraffin Wax, fully refined, slabs 125 @ 127 A.M.P. bags lb.	...	.03
130 @ 132 A.M.P. bags lb.	...	.04¼
135 @ 137 A.M.P bags lb.	...	.05
Petrolatum, Lily White, USP, 400 lb. bbl lb.	.08	.08½
Snow White USP, 400 lb. bbls lb.	.09	.11
Rice Starch, 140 lb bags lb.	.09	.10
Soap Castile, bars 40 lb. Case Cs.	...	12.75
Powd. USP 250 lb. bbls lb.	.26	.28
Green, USP, 450 lb. bbls lb.	.07½	.07½
Neutral, powd 200 lb. bbls lb.	.18	.20
Talc, Italian, 220 lb bags ton.	60.00	80.00
French, 220 lb bags ton.	40.00	45.00

Aromatics and Essential Oils

Acetophenene, CP, 1 lb bot	lb.	3.50	3.65
Aldehyde, C 8 (Otcyl) 1 lb bot	lb.	...	40.00
C 7, 1 lb bot	lb.	4.50	5.50
C 9 (Nonyl), 1 lb bot	lb.	...	120.00
C 10 (Decyl), 1 lb bot	lb.	...	38.00
C 14, 1 lb bot	lb.	...	22.00
C 16, 1 lb bot	lb.	...	20.00
AMYL ACETATE, pure, 25 lb cans	lb.	.43	.50
Butyrate, 1 lb bot	lb.	1.25	1.50
Butyrate, 5 lb bot	lb.	...	1.00
Cinnamate, 5 lb bot	lb.	9.50	9.75
Formate, 1 lb bot	lb.	...	1.90
Formate, 5 lb bot	lb.	...	1 75
Phenyl Acetate, 1 lb bot	lb.	4.50	5.00
Salicylate, 100 lb cbys	lb.	1.25	1.30
Imported	lb.	2.25	2.50
Anethol, 2 lb bot	lb.	1.25	1.50
Anisic Aldehyde, 1 lb bot	lb.	3.10	3.60
Benzaldehyde, USP, 40 lb cbys	lb.	...	...
50 lb cbys	lb.	1.35	1.45
FFC, 40 lb cbys	lb.	1.25	1.35
Benzoic Ether, see Ethyl Benzoate			
Benzophenone, 1 lb bot	lb.	2.25	2.75
Benzyl Acetate, 100 lb cbys	lb.	.65	.85
Alcohol, 5 lb bot	lb.	.85	.95
BENZYL BENZOATE		1.10	1.15
Medicinal, FFC	lb.	...	1.40
Buytrate, CP, 1 lb bot	lb.	9.25	9.50
Benzyl Cinnamate, 1¼ bot	lb.	7.00	7.25
Formate, 1 lb bot	lb.	3.15	3.25
Propionate, 1 lb bot	lb.	2.50	2.65
Succinate, 1 lb bot	lb.	5.25	5.50
Valerate, 5 lb bot	lb.	3.00	3.25
Borneol, 1 lb bot	lb.	1.35	1.85
Bornyl Acetate, 1 lb bot	lb.	1.70	2.80
Bromstyrol, 25 lb cases	lb.	3.75	3.85
Butyl Anthranilate dom, 1 lb bot	lb.		
Carvol, 5 lb bot	lb.	3.00	3.40
Cinnamic Acid, 5 lb cans	lb.	3.25	3.50
Alcohol liquid, 1 lb bot	lb.	2.50	2.60
Crystallizable	lb.	7.00	8.00
Aldehyde	lb.	2.25	2.50
Imported, 1 lb bot	lb.	7.75	9.00
Citral, 25 lb cans	lb.	2.00	3.35
Citronellal 1 lb bot	lb.	2.00	4.00
Citronelyl Acetate, 1 lb bot	lb.	4.25	4.50
Coumarin, 25 lb cans	lb.	3.50	4.00
DECYL ALCOHOL	lb.	22.00	25.00
Diphenyloxide, 25 lb tins	lb.	1.00	1.15
Diphenyl Methane	lb.	1.75	2.00
Duodecyl Alcohol	lb.	20.00	22.00
Ethyl Acetate, pure, 5 lb bot	lb.	.06	.07
Benzoate, 5 lb bot	lb.	1.50	1.75
Ethyl Butyrate, 5 lb bot	lb.	1.80	2.00
Caproate, 1 lb bot	lb.	3.25	3.50
Cinnamate, 1 lb bot	lb.	4.00	4.50
Formate, 5 lb bot	lb.	1.00	1.25
Methyl Paracresol, 1 lb bot	lb.	3.25	3.50
Phenyl Acetate, 5 lb bot	lb.	3.75	4.00
Valerate, 5 lb bot	lb.	...	3.75
Salicylate, 5 lb bot	lb.	1.95	2.00
Eucalyptol, USP, 50 lb cans	lb.	.75	.80
Eugenol, USP, 25 lb cans	lb.	3.00	3.50
Geraniol, 50 lb cases	lb.	1.75	2.35
Geranyl Acetate, 1 lb bot	lb.	2.75	2.80
Butyrate, 1 lb bot	lb.	13.00	13.50
Formate, 1 lb bot	lb.	12.00	12.50
Heliotropin, 100-10 lbs	lb.	1.65	1.75
Imported	lb.	1.95	2.05
Hydroxycitronellal, 1 lb	lb.	5.00	7.00
Indol, CP, 1 oz bot	oz.	2.90	3.00
IONONE, 1 lb bot 100%	lb.	5.00	6.00
Alpha	lb.	4.50	4.70
Beta	lb.	5.70	5.75
Methyl	lb.	5.00	5.25
Iso Borneol	lb.	2.25	2.35
Iso Bornyl Acetate	lb.	3.00	3.20
Iso-Butyl Benzoate, 5 lb bot	lb.	2.75	3.00
Iso-Eugenol, 1 lb bot	lb.	3.75	3.80
Iso-Safrol, 1 lb bot imp	lb.	1.75	1.85
Domestic, 5 lb bot	lb.	3.50	3.75
Linalol from Bois de Rose, 5 lb bot	lb.	1.90	3.90
Linalyl Acetate, 1 lb bot	lb.	2.00	3.00
Benzoate, 1 lb bot	lb.	13.00	14.00
Formate, 5 lb bot	lb.	10.50	12.00
METHYL ACETOPHENONE	lb.	2.70	2.85
Anthranilate, 1 lb bot	lb.	2.25	2.30
Imported	lb.	2.70	2.75
Anthranilic Acid	lb.	11.75	12.00
Benzoate, 5 lb bot imp	lb.	1.75	1.85
Domestic, 5 lb bot	lb.	1.75	2.00
Cinnamate, 1 lb bot	lb.	3.75	4.25
Heptenone, 1 lb bot	lb	3.50	4.00
Paracresol, 1 lb bot	lb	4.50	8.00
Phenylacetate, 5 lb bot	lb	3.75	4.00
Salicylate, USP, 500 lb dr	lb.	...	.40
50 lb cases	lb.	...	.42
Mirbane rect, 1,000 lb drs	lb.	.12	.13
Musk Ambrette 1 lb cans	lb	6.75	7.00
Ketone 1 lb cans	lb	7.55	7.80
Xylene 5 lb cans	lb.	2.25	2.85
Nerolin 1 lb cans	lb.	1.35	1.40
Octyl Alcohol 1 lb bot	lb.	16.00	18.00
Oenanthic Ether lb bot	lb.	1.90	2.00
Oleoresin Aspidium, USP, bot and tins	lb.	...	1.25
Capsicum, USP, bot and tins	lb.	2.75	3.50
Cubeb, USP, bot and tins	lb.	3.00	3.25
Ginger bot and tins	lb.	2.35	2.85
Malefern see Aspidium			
Orris, bot & tins	lb.	15.00	18.00
Pepper, black, USP, bot & tin	lb.	...	9.50
Vanilla, bot & tins	lb.	8.00	8.75
Paracresol Methyl Ether	lb.	4.25	4.50
Paracresyl Acetate	lb.	5.50	5.75
Para Cymene Refd 110 gal dr	gal.	2.25	2.50
PHENYLACETALDEHYDE 50% 1 lb bot	lb.	4.75	5.00
Imported 50%	lb.	4.75	5.00
100%	lb.	8.00	8.25
Phenylacetic Acid 1 lb bot	lb.	2.65	2.90
Phenyl Diacetate 1 oz bot	oz.	3.00	3.25
1 lb bot	lb.	8.00	10.00
Imported	lb.	7.00	7.75
Phenylethyl Alcohol 1 lb bot	lb.	4.40	4.65
Phenyl Ethyl Acetate	lb.	8.25	8.75
Butyrate 1 lb bot	lb.	15.00	16.00
Formate, 1 lb bot	lb.	19.00	21.00
Propionate, 1 lb bot	lb.	16.00	18.00
Valerate, 1 lb bot	lb.	19.00	20.00
Phenylpropylalcohol, 1 lb bot	lb.	8.50	9.00
Rhodinol, 1 lb bot	lb.	6.25	20.00
Saffrol, drums	lb.	.30	.32
60 lb cans	lb.	.32	.34
Skatol, 1 oz bot	lb.	4.50	7.00
Terpinyl Acetate, 25 lb cans	lb.	.85	.90
Imported, 25 lb cans		.85	.90
TERPINEOL, CP, 1000 lb drs	lb.	.27	.29
50 lb cans	lb.	.31	.33
Absolute, 25 lb cans	lb.	.48	.50
Imported, 25 lb cans	lb.	.58	.60
Valerianic Ether see Ethyl Valerate			
Vanillin (Clove Oil), USP	lb.	5.50	5.75
(Guaiacol) USP	lb.	5.00	5.25

Essential Oils

Almond Bitter, USP, 5 lb bot	lb.	2.25	2.35
Bitter, ffPA, 5 lb bot	lb.	2.35	2.50
Sweet, 56 lb cans	lb.	.44	.47
Almond Meal, 25 lb cans	lb.	.20	.21
Amber crude, 25 lb tins	lb.	.15	.17
Rectified, 25 lb tins	lb.	.50	.53
Amber liquid, 400 lb drs	lb.	2.20	2.30
Ambergris, Black, boxes	oz.	14.00	15.00
Gray boxes	oz.	32.00	36.00
Angelica Root, 1 lb bot	lb.	25.00	35.00
Anise Tech, 400 lb drums	lb.	.41	.43
USP, 50 lb cans	lb.	.43	.45
Apricot Kernel, 50 lb cans	lb.	.26	.27
Bay, 25 lb tins N. F. V., 50.55% Phenol	lb.	1.90	1.95
Terpeneless	lb.	4.25	4.45
BERGAMOT, 25 lb coppers	lb.	1.80	2.15
Terpeneless	lb.	6.25	9.25
Artificial, 25 lb cans	lb.	1.25	1.50
Birch, Sweet, Northern, 25 lb tins	lb.	3.00	3.10
Southern, 25 lb tins	lb.	...	1.85
Birch Tar, rect., 5 lb bot	lb.	.50	.55
Crude, 50 lb tins	lb.	.13	.14
Bois de Rose, tins Brazillian	lb.	.75	.85
Cayenne, tins	lb.	1.25	1.45
Cade, 25 lb cans	lb.	.25	.26
Cajuput, native, 50 lb tins	lb.	.57	.62
Calamus, 5 lb bot	lb.	2.75	3.00
Camphor Sassa, 1000 lb drs	lb.	.21	.22
White, 400 lb drs	lb.	.17	.18
Cans, 50 lbs	lb.	.19	.20
CANANGA, Native 25 lb tins	lb.	1.75	1.90
Rectified, 25 lb tins	lb.	2.10	2.20
Caraway, USP	lb.	1.50	1.65
Cardamon, NF, 1 lb bot	lb.	20.00	25.00
Cascarilla, USP, 1 lb bot	lb.	65.00	80.00
Cassia,		...	...
Redist, USP, 50 lb cans	lb.	.95	1.00
Cedar Leaf, 50 lb tins	lb.	.85	1.00
Cedar Wood, light, 1000 lb drs	lb.	.32	.34
Celery, 1 lb bot	lb.	...	7.50
Chaulmoogra, USP 80 lb cases	lb.	...	1.50
Cinnamon Ceylon, 1 lb bot	lb.	9.00	10.00
Leaf, 5 lb bot	lb.	1.85	1.95
CITRONELLA Ceylon, 1000 lb drs	lb.	.37	.38
50 lb tins	lb.	.38	.40
Java, 400 lb drs	lb.	.55	.57
50 lb tins	lb.	.57	.59
Civet, Abyssin, horns	oz.	2.10	3.00
Cloves, USP, 50 lb cans	lb.	1.20	1.25
6 lb bot	lb.	1.30	1.35
Copaiba	lb.	.45	.50
Coriander, USP, 10 lb bots	lb.	4.50	4.75
Croton USP, 25 lb tins	lb.	4.50	5.00
Cubebs, USP, 5 lb bot	lb.	2.70	2.80
Cumin, 1 lb bot	lb.	7.00	7.50
Dill, 25 lb cans	lb.	3.15	4.65
Erigeron, 20 lb tins	lb.	1.10	1.20
EUCALYPTUS Austl, USP, 56 lb cans, cases	lb.	.30	.31
500 lb drs	lb.	.28	.29
Fennel, USP, 25 lb tins	lb.	.95	1.10
Geranium African, 25 lb tins	lb.	4.00	4.90
Bourbon, 28 lb tins	lb.	3.90	4.00
Turkish, 28 lb tins	lb.	2.10	2.25
Ginger, 1 lb bot	lb.	4.35	4.50
Gingergrass, 28 lb tins	lb.	2.50	2.70
Grape Fruit	lb	2.90	3.00
Hemlock, 25 lb tins	lb.	1.00	1.05
Juniper Berries, USP, 25 lb tins	lb.	1.50	1.55
Wood, 50 lb tins	lb.	.50	.60
Labdanum, 5 lb bot	lb.	5.50	6.00
LAVENDER, USP, 28 lb tins	lb	1.90	2.10
Spike Spanish, 50 lb cans	lb.	.43	.48
Lemon Ital, 25 lb cans	lb.	1.05	1.10
California 35 lb cbys	lb.	.80	.90
Lemongrass, native, 50 lb cans	lb.	.65	.67
Limes, expressed, 25 lb tins	lb.	12.00	14.00
Distilled, 25 lb tins	lb.	9.75	10.75
Linaloe Mex., 70 lb cases	lb.	...	1.75
Mace, distilled, 50 lb tins	lb	1.20	1.25
Mandarin, 25 lb cases	lb.	4.20	4.70
Musk Pods Cabardine, tins	lb.	...	...
Musk Tonquin, tins, Pods	oz.	24.00	26.00
Grains Cabardine, tins	oz.	...	...
Tonquin, tins, Grained	oz.	28.00	34.00
MUSTARD, USP, 1 lb bots	lb.	9.50	10.00
Artif, USP, 5 lb bot	lb.	1.55	1.65
Neroli Bigarade, ¼ & ½ & 1 lb bot	lb.	80.00	110.00
Petale, 1 lb bot	lb.	95.00	105.00
Artificial, 1 lb bot	lb.	5.00	15.00
Nutmeg, USP, 50 lb tins	lb	1.05	1.10
ORANGE BITTER, 25 lb tins	lb	2.35	2.60
Sweet W Ind, 25 lb tins	lb	1.85	2.00
Italian, 25 lb cop	lb	2.00	2.25
Orange American, Cold pressed 25 lb tins	lb.	1.85	1.90
Distilled, 25 lb tins	lb.	1.00	1.05
Spanish, 25 lb tins	lb.	...	2.25
Oil Orris, concrete	oz.	4.75	5.00
Origanum, 50 lb cans tech	lb.	.25	.27
Parsley, 1 lb bot	lb.	7.50	7.75
Patchouli, 5 lb bot	lb.	4.50	4.85
Pennyroyal, dom, 25 lb tins	lb.	1.75	1.95
Imported, 25 lb tins	lb.	...	1.05
Pepper Black lb.		...	6.00
Peppermint, nat. 60 lb cases	lb.	1.65	1.75
Redis, USP, 60 lb cs	lb.	1.80	1.90
Petit Grain S A., 25 lb tins	lb.	1.15	1.25
French, 1 lb bot	lb.	4.50	4.75
Italian, 25 lb tins	lb.	2.20	2.30
Pimento Leaf, 25 lb tins	lb.	1.50	1.65
Berries, 25 lb tins	lb.	3.00	3.10
Pineedle Siberian, cans	lb.	.60	.65
Pinus, Sylvestris, 25 lb tins	lb.	1.30	2.00
Pumilio, USP, 25 lb tins	lb.	1.90	1.95
Rose Fr, 8, 16, & 32 oz pkgs	lb.	14.00	17.00
Bulg, 8, 10 & 32 oz pkgs	oz.	10.00	11.00
Rosemary, USP, 27½ lb tins	lb.	...	.44
1000 lb drums	lb.	...	.43
Tech, 25½ lb tins	lb.	...	.37
Rue, 1 lb bot	lb.	3.00	3.10
SANDALWOOD, E Ind, USP, 100 lb case	lb.	7.50	7.75
W Indian (Amayris), 25 lb tins	lb.	2.85	2.95
Australian, Tins		5.65	5.65
Sassafras, USP, 50 lb cans	lb.	1.05	1.07
Artificial, 1000 lb drs, 60 lb cans	lb.	.27	.29
Safrol, cans	lb.	.36	.38
Sage, Dalmatian, 25 lb. cans	lb.	2.40	2.50
Savin, 50 lb tins	lb.	2.10	2.35
Snakeroot, Canada	lb.	8.50	8.75
SPEARMINT, USP, 50 lb tins	lb	1.50	1.60
Spruce, 50 lb tins	lb	.95	1.00
Tansy, American, 25 lb tins	lb.	2.20	2.35
Tar, 50 gal bbls	lb.	.25	.30
USP, 50 gal bbls	lb.	.75	1.50
Thyme, red, NF, 25 lb tins	lb.	.65	.68
White, NF, 25 lb tins	lb.	.83	.85
Tech, 110 lb drums	lb.	.60	.70
Turpentine, USP, rect cbys	lb.	.27	.30
Vetivert Bourbon, 10 bot	lb.	4.75	5.00
Indian, 1 lb bot	lb.	25.00	38.00
Java, 1 lb bot	lb.	12.00	13.00
Wine, heavy, 1 lb bot	lb.	1.50	1.60
WINTERGREEN Gaultheria, true, 25 lb tin	lb.	8.00	10.00
Southern, 25 lb tins	lb.	3.75	4.00
Synthetic see Methyl salicylate			
Wormseed, Balt, 25 lb tins	lb.	2.90	3.05
Wormwood, dom, 25 lb tins	lb.	5.15	5.40
Ylang Ylang Bourbon, 10 lb tins No. 1	lb.	5.25	5.50
10 lb tins No. 2	lb.	5.20	5.25
Manila, 1 lb bot	lb.	30.00	36.00

Drugs and Spices

Aconite Root, USP, bags	lb.	.13	.14½
Agar Agar, No. 1, bales	lb.	1.15	1.20
Agar Agar No. 2, bales	lb.	1.07	1.10
Almonds Meal	lb.	.25	.30
Aletris Root, bags	lb.	.21	.22
Alkanet Root, bags	lb	.09	.10
ALOES, Cape, 400 lb cases.	lb.	.11	.12
Curacao, 100 lb cases	lb.	.21	.23
Socotrine, Whole, 300 lb cs	lb.	.32	.37
Althea Root, bags	lb.	.20	.22
Cut cases	lb.	.18	.25
Angelica Root, bags	lb.	.13	.14
Angostura Bark, bags	lb.	.18	.19
Anise Star case	lb	.13	.14
Spanish, bags	lb	.07½	.08
ARABIC GUM, White, No. 1, 220 lb bags	lb.	.20	.21
Seconds, 220 lb bags	lb.	.19	.20
Sorts, Amber, 220 lb bags	lb.	.09	.09½
Powd, USP, 300 lb bbls	lb.	.14	.17
Areca Nuts, 100 lb bbls	lb.	.05	.07
Powd, 100 lb bbls	lb.	.10	.11
Arnica Flowers, bales	lb.	.11	.12
Root, bags	lb.	.42	.43
Arrowroot, St. Vincent, powd bbls	lb.	.08	.09
Asafoetida, 250 lb cases	lb.	.18	.19
Powd, 50 lb boxes	lb.	.35	.36
Balm Gilead Buds, bags	lb.	.26	.27
Balmony Herbs, bales	lb.	.13	.15
BALSAM COPAIBA Para, 80 lb cases	lb.	...	.23
South American, USP, 80 lb cases	lb.	...	.24
Peru, 120 lb cases	lb.	1.30	1.35
Tolu, 90 lb cases	lb.	.65	.70
Barberry Bark, of root, bags	lb.	.17	.19
Bayberry Bark, bales	lb.	.08	.09
Wax bbls	lb.	.22	.25
BELLADONNA LEAVES, bale	lb.	.13½	.15½
Root, bags	lb.	.11	.12
Bees Wax, White, cases	lb.	.38	.42
Yellow refined cases	lb.	.28	.32
Yellow Crude Cases	lb	.23	.25
Benzoin Gum, Siam, boxes	lb.	1.20	1.30
Sumatra, cases	lb.	.28	.29
Berberis Aquafolium Root, bags	lb.	.09	.10
Beth Root, bags	lb.	.09	.10
Black Indian Hemp Root, 100 lb bags	lb.	.12	.13
Blood Root, bags	lb.	.11	.11½
Blueflag Root, bags	lb.	.13	.14
Boldo Leaves, bales	lb.	.15	.17
Boneset Herb, bales	lb.	.08	.09
Borage Flowers, bales	lb.	.12	.13
Broomtop Herb Cut, bales	lb.	.07	.08
Bryonia Root, bags	lb.	.10	.11
BUCHU LEAVES Short, 250 lb. bales	lb.	.20	.21
Long bales	lb.	.75	.80
Buckbean Leaves, bales	lb.	.08½	.09
Buckthorn Bark, bags	lb.	.04½	.05
Berries, bags	lb.	.29	.34
Burdock Root, bags	lb.	.08	.09
Seed bags	lb.	.30	...
Burgundy Pitch, 110 stand gross for net	lb.	.08	.09
Imported	lb.	.10	.11
Calabar Beans, bags	lb.	.20	.21
Calamus Root, blchd cases	lb.	.32	.35
Unbleached, bags	lb.	.07	.08½
Calendula Petals, imp bales	lb.	.30	.35
Calisaya Bark, bales	lb.	.19	.20
Powdered, bbls	lb.	.25	.26
Canary Seed, South America, bags	lb.	.05	.05½
Dutch, bags	lb.	.05	.06
Candelilla Wax, bags	lb.	.13¼	.14
Cannella Alba Bark, bales	lb.	.25	.26
Cannabis, U.S.P.	lb	.19	.26
Cantharides, Chinese, cases	lb.	.35	.40
Powdered, boxes	lb.	.60	.63
Russian, cases	lb.	.70	.75
Powdered, boxes	lb.	.75	.77
Caraway Seed, African, bags	lb.	.04¾	.05¾
Dutch, 11 lb bags	lb.	.06¼	.06¾
Cardamon bleached, cases	lb.	1.10	1.15
Decorticated, cases	lb.	.54½	.55
Cascara Amarga, 150 lb bbls	lb.	Nom	...
So called bales	lb.	.50	.75
CASCARA SAGRADA, 1929 bark	lb.	.17	.18
1930 bark	lb.	.16½	.18
1931 bark	lb.	.11½	.12½
Cascarilla Bark, quills, bales	lb.	.85	.95
Siftings, bbls	lb.	.65	...
Cassia Batavia No. 1 bbls	lb.	.07	.07¼
Shortstick, bales	lb.	.06¼	.06½
Batavia No. 3, bales	lb.	.05¾	.06
China Select Rolls, cases	lb.	.02½	.03
Broken, bales	lb.	.05½	.05½
Saigon, thin	lb.	.20	.21
Buds, cases	lb.	.20	.25
Fistula, baskets	lb.	.09	.10
Catnip, Herb, bales	lb.	.18	.19
Celery Seed, bales	lb.	.16	.16½
Ceresin Wax, White, bags	lb.	.15	.20
Yellow 200 lb. bags	lb.	.11	.14
Imp. 100 lb. bags	lb.	.25	.38
CHAMOMILE FLOWERS Roman, bales	lb.	.32	.35
Hungarian, cases	lb.	.14	.15
Charcoal Willow, powd, bbls	lb.	06	.06½
Wood, powd, bbls	lb.	.04	.05
Chestnut Bark	lb.	.07	.08
Leaves bales	lb.	.05	.05½
Chicle Gum, lb bbls	lb.	.58	.75
Chiretta, bales	lb.	.15	.18
Cinnamon, Ceylon, No. 1, bales	lb.	.15	.16
No. 2 bales	lb.	.12	.12½
No. 3 bales	lb.	.11½	.12
Clover Tops, Red, bags	lb.	.08	.09
Cloves Zanzibar, 135 lb bbl	lb.	.18	.18½
Cochineal, Black	lb.	.69	...
Silver	lb.	.85	...
Cohosh Root, Black, bags	lb.	.05	.06
Blue, bags	lb.	.06	.07
Colchicum Root, bags	lb.	.07	.08
Seed, bags	lb.	.65	.70
COLOMBO ROOT, bags	lb.	.06	.07
Colocynth Pulp, bales	lb.	.19	.20
Coltsfoot Leaves, bags	lb.	.06	.07
Comfrey Root, bags	lb.	.10	.11
Condurango Bark, bags	lb.	.09	.10
Coriander Seed, Morocco, bags	lb.	.03½	.04
Bleached, bags	lb.	.05½	.06
Corn Silk, bales	lb.	.05½	.06½
Cotton Root Bark, bales	lb.	.07	.08
Cowhage, 1 oz tins	lb.	1.00	...
Cramp Bark so called bales	lb.	.05½	.06
True, bags	lb.	.27	.29
Cranesbill Root, bags	lb.	.07½	.08
CUBEB BERRIES, XX bags	lb.	.32	.33
Powdered, boxes	lb	.34	.35
Culvers Root, bags	lb.	.13	.14
Cumin Seed, Malta, bags	lb.	.12½	.12¾
Morocco, bags	lb.	.06¾	.07
Cuttlefish, Bone Trieste, Straps	lb.	.19	.22
French, boxes	lb.	.18	.21
Powdered, bbls	lb.	.09	.10
Broken, bales	lb.	.07	...
Damiana Leaves, bales	lb.	.15	.16
Dandelion Root, Imp. bags	lb.	.12	13
Deer Tongue Leaves, bales	lb.	.10	.12
Digitalis Leaves, bales	lb.	.11	.12
Dogwood Bark, Jamaica bags	lb.	.08	.09
American bales	lb.	.06½	...
Doggrass Root, USP, cut bags	lb.	.14½	.16
Dragons Blood Mass, cases	lb.	.65	.70
Reeds, boxes	lb.	.90	.95
Echinacea Root, bags	lb.	.17	.18
Elcampane Root, bags	lb.	.05	.06
Elder Flowers, bags	lb.	.21	.24
Elemi Gum, 85 lb cases	lb.	.26	.28
Elm Bark, bundles	lb.	.19	.22
Grinding bags	lb.	.09	.10
Powdered, bbls	lb.	.16	.18
Ephedra Vulgaris, bales	lb.	.07	.08
ERGOT, 150-200 lb bags	lb.	.45	.63
Eucalyptus Leaves, bales	lb.	.05	.06
Euphorbia Pilulifera, Herb, bags	lb	.05	.08
Euphorbium Gum, cases	lb.	.14	.20
Fennel Seed, French, bags	lb.	.07½	.08
German bags	lb.	.08	.10
Foenugreek Seed, 200 lb bags	lb.	.04	.04½
Fish Berries, 100-125 lb bag	lb.	.06	.07½
Flax Seed, Whole 182 lb bbls		14.50	15.25
Ground, 180 lb bbls	lb.	.06	.06¼
Fringe Tree Bark or Root bags	lb.	.13	.15
Fumigating Pastiles, boxes	lb.	.28	.33
Galangal Root, bags	lb.	.08	.09
Galbanum Gum, cans	lb.	.90	1.00
Gamboge Gum, 100 lb cases	lb.	.70	.75
Powdered, cases	lb.	.80	.85
Gelsemium Root, bags	lb.	.06½	.07½
GENTIAN ROOT, bags	lb.	.07	.08
Ground bbls, boxes	lb.	.10	.11
Powdered, bbls, boxes	lb.	.10	.11
Ginger, African, bags	lb.	.06¼	.06¾
Jamaica Grinding bags	lb.	.09	.09½
Cochin ABC & Lemon, bags	lb.	.12	.12½
Ginseng Root, cultivated cs	lb.	8.00	10.00
Wild Southern, cases	lb.	...	16.00
Golden Seal Root, bags	lb.	1.15	1.20
Powdered, boxes	lb.	1.40	1.45
Herb, barrels	lb.	1.25	1.30
Grains of Paradise, bags	lb.	.10	.14
Grindelia Robusta, Herb, bale	lb.	.07	.08
Guaiac Gum, 150 lb cases	lb.	.30	.31
Strained 75 lb cases	lb.	.70	.75
Guarana, tin cases	lb.	1.00	1.25
Hellebore Root, Black, bbls	lb.	.05½	.06
White, 250 lb bbls	lb.	.07¾	.08½
Powdered	lb.	.11	.12
Helonias Root, bags	lb.	.30	.32
Hemp Seed, bags	lb.	.03¼	.03¾
Henbane Leaves, USP, bales	lb.	.10	.11
HENNA LEAVES, bales	lb.	.10	.11
Powdered	lb.	.13	.14
Hops, bales	lb.	...	.23
Horehound, Herb, bales	lb.	.07	.08
Hydrangea Root, bales	lb.	...	.06
IPECAC ROOT, Carteagna, bags	lb.	1.25	1.30
Powdered, 220 lb bbls	lb.	1.50	1.55
Isinglass, American, 130 lb cases	lb.	.95	1.00
Russian (Beluga), boxes	lb.	4.50	...
Jaborandi Leaves, bales	lb.	.08	.08½
Jalap Root, Whole, 150 lb bag	lb.	.18	.20
USP, Powd, 250 lb bbls	lb.	.23	.26
Japan Wax 224 lb cases	lb.	.09	.09¼
JUNIPER BERRIES, 125 lb bags	lb.	.04¾	.05½
Kamala, boxes	lb.	.48	.55
Karaya Gum, Powdered, bbls	lb.	.12	.20
Kava Kava Root, bags	lb.	.13	.14
Kino Gum, Black, cases	lb.	.50	.55
Kola Nuts, 150 lb bags	lb.	.06½	.07½
Lady Slipper Root, bags	lb.	.40	.45
Larkspur Seed, bags	lb.	.30	.35
Laurel Berries, bags	lb.	.08	.09
Leaves, Greek, bags	lb.	.05	.05½
Italian, bales	lb.	.08	.09
Lavender Flowers, Ordinary	lb.	.18	.20
Selected	lb.	.29	.31
Lemon Peel, bags	lb.	.09	.10
LICORICE ROOT, Whole bbls	lb.	.12	.15
Spanish Natural bales	lb.	.05½	.07
Powdered, bbls	lb.	.08	.10
Selected 2 & 5 lb bdls	lb.	.12	.15
Cutting, 125 lb bags	ln.	.06	.06½
Turkish, 150 lb bales	lb.	.05	...
Linden Flowers with leaves, bales	lb.	.15	.16
Without leaves, bales	lb.	.20	.21
Liverwort Leaves, bales	lb.	.15	.16
Lobelia, Herb, bales	lb.	.08	.09
Seed, bags	lb.	.35	.40
Lovage Root, Imp., bags	lb.	.18	.20
Lupulin N. F., tins	lb.	1.35	1.40
Lycopodium, 88 lb. cases	lb.	.35	.36
MACE SIAUW, No. 1, cases	lb.	.34	.35
Banda No. 1, cases	lb.	.41	.42
Batavia No. 2, cases	lb.	.31	.32
Malva Flowers, Blue, bales	lb.	.37	.39
Black, bales	lb.	.25	.40
Leaves, bales	lb.	.13	.14
Manaca Root, bales	lb.	.23	.24
Manna, Large Flake, cases	lb.	.58	.60
Small Flake, cakes	lb.	.37	.45
Sorts, cases	lb.	.45	.50
Mandrake Root, bags	lb.	.08½	.09½
Marjoram, Herb			
French, No. 1 bales	lb.	.14½	.15
German, bales	lb.	.13	.14
Mastic Gum, 120 lb cans	lb.	.65	.70
Matico Leaves, bales	lb.	.18	.21
Mezereon Bark, bags	lb.	.15	.16
Millet Seed, Yellow, bags	lb.	.02½	.03
Montan Wax, Crude, bags	lb.	.06	.07
Bleached, bags	lb.	.26	.28
Moss, Iceland, bales	lb.	.09	.11
Irish, Bleached, bales	lb.	.10	.12
Mullein Flowers, tins	lb.	.75	.80
Leaves, bales	lb.	.07½	.08
Musk Root, Russian, bags	lb.	.07	.08
Myrrh Gum, 200 lb, cases	lb.	.18	.20
Nutgalls, Chinese, bags	lb.	.22	...
Aleppy, bags	lb.	...	Nom.
Powdered, bags	lb.	.23	...
Nutmegs, 110's cases	lb.	.13	.13½
75's & 80's cases	lb.	.16	.16½
Grinding, bags	lb	.18	.19
NUX-VOMICA Buttons, bag	lb.	.05	.06
Powdered, 200 lb bbls	lb.	.08	.09
Oak Bark, bags	lb.	.06	.06½
Olibanum Gum, 280 lb cases Siftings	lb.	.08	.09
Tears, No. 1 Extra	lb.	.24	.25
No. 2	lb.	.16	.18
No. 3	lb.	.12	.13
Opium Gum, USP, cases	lb.	12.00	13.00
Granular, cans	lb.	13.00	14.00
Powdered, USP, cans	lb.	13.00	14.00
Orange Flowers, cases	lb.	.25	.30
Peel, Bitter, bags	lb.	.08	.09
Sweet bags,	lb.	.07	.08
ORRIS ROOT, Flor. bid. bags	lb.	.13	.14
Powdered, 200 lb bbls	lb.	.16	.17
Verona, bags	lb.	.09½	.10
Powdered, 200 lb bbls	lb.	.14	.15
Fingers, boxes	lb.	.90	.95
Ozokerite Wax, Brown, Hard	lb.	...	...
Bags	lb.	.24	.25
Green, Hard, bags	lb.	.30	.31
Yellow, Refined, bags	lb.	.37	...
Papain, Crude, 150 lb cases	lb.	2.15	2.20
Pure, Powdered, 10 lb bot	lb.	2.30	2.35
Paprika, bags	lb.	.20	.20½
Pareira Brava Root, bags	lb.	.13	.14
Passion Flower, bales	lb.	.05	.06
Patchouli Leaves, bales	lb.	.18	.19
Pennyroyal, Herb, 100 lb bags	lb.	.07	...
Leaves, 100 lb bags	lb.	.12	.13

Drugs and Spices

PEPPERMINT LEAVES, Imp bales	lb.	.30 .40
Domestic, bales	lb.	.24 .28
Pichi Leaves, bags	lb	.10 .11
Pimento Select, bags	lb.	.05½ .06
Pink Root, True, bags	lb.	.32 .34
Pleurisy Root, bags	lb.	.15 .16
Poke Berries, bags	lb.	... .18
Root, 200 lb bales	lb.	.06 .06½
Pomegrant Bark of Root, bags	lb.	.29 .34
Bark of Fruit, bags	lb.	.23 .28
Bark of Tree, bags	lb.	.15 .18
POPPY FLOWERS, Red, bags	lb.	.40 .42
Prickly Ash Bark	lb.	.12 .15
Southern bags	lb.	.11 .11½
Northern, bags	lb.	.13 .14
Berries, bags	lb.	.20 .21
Prince's Pine, bales	lb.	.15 .20
Psyllium Seed, Black, bags	lb.	.34 .36
Plantago Seed, Blonde, Bags	lb.	.08 .09
Pulsatilla, Herb, bags	lb.	.10 .11
Pumpkin Seed, bags	lb.	.11 .12
Pyrethrum Flowers	lb.	.17 .18
Pwd., pure, 200 lb.bbls.	lb.	.20 .21
Quassia Chips, bags	lb.	.06½ ...
Quebracho, bulk, 125 lb. bbl.	lb.	.22 .23
Quince Seed, Spanish bags	lb.	1.05 1.30
Persian, bags	lb	1.72 1.80
Rape Seed, South American, bags	lb.	.05½ .06
Dutch, bags	lb.	.06 .06½
Raspberries, Dried, bbls	lb.	.50 .55
Red Saunders, bags	lb.	.08 ...
Rhatany Root, bags	lb.	.10 .11
Rhubarb Root, HD, cases	lb.	.15 .17
Powdered, bbls	lb	.20 .22
Rosemary Leaves, bales	lb.	.05 .05½
Flowers, cases, bales	lb.	.25 .30
Rose Petals, pale	lb.	.16 .16½
Red	lb.	.50 .55
Rue, Herb, bales	lb.	.18 .20
Sabadilla Seed, bags	lb.	.17 .18
Powdered, bbls	lb.	.19 .19½
SAFFRON FLOWERS, American, bales	lb.	.21 .22
Valencia, 1 lb cans	lb.	10.25 10.75
Sage Dalmatian, bales	lb.	.05½ .06
Sandarac Gum, 300 lb bbls.	lb.	.30 .35
Sarsaparilla Root, Honduras, bales	lb.	.45 .46
Mexican, bales	lb.	.14 .15
Sassafras Bark, Ordinary, bales		.08 .10
Select, bales	lb.	.16 .17
Savory Leaves, bale	lb.	.06½ .07
Saw Palmetto Berries, bags	lb.	.07½ .08½
Scammony Resin, boxes	lb.	1.30 1.35
Root, bags	lb.	.08½ ...
Senega Root, bags	lb.	.40 .42
SENNA ALEX., 150 lb cases	lb.	.25 .30
Half leaf 150 lb bales	lb.	.11 .13
Sifting, 400 lb bales	lb.	.11 .11½
Tinnevelly, Bold, 350 lb bales	lb.	.12 .14
Medium Leaf	lb.	.09 .10
Small Leaf	lb.	.07 .09
Pods, 350 lb	lb.	.09½ .10½
Powdered, 200 lb	lb.	... .10
Serpentaria Root, bags	lb.	.35 .36
Simaruba Bark, bales	lb.	.24 .26
Skullcap Leaves, Eastern, bales	lb.	.30 .35
Western, bales	lb.	.20 .30
Skunk Cabbage, Natural, bales	lb.	.12 .14
Snake Root, Canada Natural, bags	lb.	.18 .19
Canada, Stripped, bags	lb.	... .50
Soap Bark	lb.	.12 .13
Cut, 125-175 lb bags	lb.	.08 .09
Crushed, 200 lb bbls.	lb.	.16 ...
Powdered, bbls.	lb.	.12 .13
Spearmint Leaves, American, bales	lb.	.22 .23
Spermaceti, blocks, cakes, cases	lb.	.22 .24
Spikenard Root, bags	lb.	.08½ .09
Squaw Vine, bales	lb.	.12 .13
Squills, White	lb.	.05 .06
Powdered, bulk	lb.	.23 .25
Stavesacre Seed, bags	lb.	.14 .15
Stillingia Root, bags	lb.	.07½ .08
Stone Root, bags	lb.	.08 .09
St. Ignatius Beans, bags	lb.	... Nom.
St. John's Bread, bags	lb.	... .09
STRAMONIUM LEAVES, bales	lb.	.09 .11
Seed, bags	lb.	.07½ ...
Strophanthus Seed, Kombe, bags	lb.	1.80 2.00
Styrax Liquid, Artificial	lb.	.26 .35
Genuine, USP	lb.	.38 .43
Sunflower Seed, bags Calif.	lb.	.04½ .05
South American, bags	lb.	.07 .07½
Tamarinds, bbls	lb.	.05 .06
Kegs	keg	3.75 3.85
Tansy, Herb, bales	lb.	.13 .14
Thus Gum, 280 lb bbls	lb.	.07½ .16½
THYME, Spanish, bales	lb.	.08 .08½
French, bales	lb.	.06 .06½
Tonga Root, bundles	lb.	.25 .26
Bark, bundles	lb.	.25 .26
Tonka Beans, Angostura Cases		1.50 1.65
Para cases	lb.	.70 .75
Surinam cases	lb.	.75 .80
Tragacanth Gum, No 1, 100 lb. cases	lb.	1.30 1.40
No. 2	lb.	1.20 1.25
No. 3	lb.	1.05 1.15
Powdered, 50 lb boxes	lb.	.80 .90
Turkish cases	lb.	.45 .90
Turmeric Root Madras, bags	lb.	.06½ .07
Aleppy bags	lb.	.05½ .05¾
Powdered	lb.	.11 .13
China bags	lb.	.11 .12
Turpentine Venice True, 80 lb cases	lb.	.32 .40
Artificial, 80 lb cases	lb.	.17 .18
Uva Ursi Leaves, bales	lb.	.05 .05½
Valerian Root, Belgium bags	lb	.09 .10
VANILLA BEANS, Mexican, whole, cases	lb.	4.00 4.50
Cuts, cases	lb.	2.50 2.65
Bourbon, cases	lb.	1.00 1.50
Vetivert Root, 100 lb bags	lb.	.25 ...
Violet Flowers, bags	lb.	.80 .85
Wahoo Bark of Root, bags	lb.	.32 .33
Bark of Tree, bags	lb.	.19 .20
White Pine Bark, Roseed, bags	lb.	.06 .08
White Poplar Bark, bags	lb.	.06 .07½
Wild Cherry Bark, Natural thin, Green	lb.	.06 .07
Rossed bales	lb.	.09 .10
Thick Rossed, bales	lb.	.04 .05
Wild Indigo Root, bags	lb.	.10 .11
Willow Bark, bags	lb.	.05 .05½
White, bags	lb.	.15 ...
Witch Hazel Bark, bags	lb.	.05 .06
Leaves, bales	lb.	.07 .08
Wormseed, American, bags	lb.	... .06
Wormwood, Herb, Imp., bales	lb.	.08 .08½
Yellow Dock Root, bags	lb.	.07 .08
Yerba Mate, bags	lb.	.12 .15
Santa, bags	lb.	.08 .09

Lavender

(*Continued from page 248*)

identifying and checking lavender oils in particular. It would seem that their editors have not sufficient knowledge of the question under consideration, nor appreciation of the information which should be available on reference to the now extensive bibliography on the subject of essential oils.

"After having been so long confined to the pharmaceutical laboratory, the scientific production of essential oils has now become a vast industry with immensely improved means of study and information. Works of all kinds relating to oils produced on a large scale, like lavender oil, are wide-spread and important, and the aspect of the various questions involved in their production and examination is extending rapidly. The codification as exact and as clear as possible of the characteristics of normal essential oils can only be based on information supplied by specialists. Against the rapid development of new substances or those new to commerce, must be set ever fresh modifications of the methods of examination applicable to each individual case announced by the relations between constants. It is to be hoped that the editors of pharmacopoeias will at last become inspired by considerations so obvious.

"False or incomplete data greatly inconvenience both honest producers and normal trade. They facilitate the extension of adulteration and lend official sanction to adulterated substances. They give rise to disputes, delays in delivery, vexations of all kinds, the number and extent of which it would be quite easy to reduce.

"Finally, the consumer suffers from all the consequences of incorrect measurement of the really active substances, or from the presence of elements of a different activity. Therapeutic applications and experiments of all kinds should be made with pure materials."

Labeling Anti-Fat Medicinals

(*Continued from page 235*)

to be adulterated because of that content. It was also alleged to be misbranded because of its being named a "wafer" and because of labeled therapeutic claims that if eaten at mealtime it would "not only reduce, but would help build up a general condition of health and beauty."

Another seizure involved a reducing cracker bearing a very similar name to the above. This was a brown wheat cracker containing senna and mineral oil, for which a number of claims, somewhat similar, were made. Adulteration and misbranding were alleged in that case also. These cases and others somewhat similar involving alleged anti-fat preparations were not contested by manufacturers or shippers, but were allowed to go to forfeiture and destruction, through default.

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Has Drug Wholesaling Advanced?

(*Continued from page 231*)

But the tactics described above might for the most part antagonize only the manufacturers, and after all, even though the wholesalers survive by reason of the discounts allowed them by the manufacturers—whether the wholesalers give away the discounts or not—they have long chosen the course of attempting to please the retailer and making the manufacturer like whatever they might do. But strange to say there have been some business policies, and many rumors of policies that do not sit so well with the retailers. These policies are the connection with McKesson & Robbins with Walgreen by means of which McK & R are supplying the Walgreen stores with those items which Walgreen does not buy direct; and the connection of McK & R with the Mayflower Drug Stores, a chain of twenty-one stores in Pittsburgh, which chain has organized a wholly owned subsidiary, Keystone Service Drug, Inc. to distribute the McKesson line in Western Pennsylvania under an exclusive contract. Fifty independent retailers were reported to have contracted with Keystone for the line.

The rumors connecting the proposed merger of the various smaller chains with McKesson have been denied in a manner which might allow of the chain being supplied with items by McKesson, or of handling the McKesson line without McKesson owning the chain or being directly financially interested in the chain. Naturally those in competition with McKesson might use such a rumor to their advantage, since McKesson is still announcing its policy of being interested only in the independent retailer, and is spending its money on radio advertising which is featuring not any of the McKesson products, but only the service of the independent druggist and his high professional qualifications.

There are those who view the position of McKesson & Robbins as little different from the stockholders viewpoint than United Drug Company taken as a separate unit. United Drug owns the Liggett drug stores, but at the same time it has over 10,000 retail drug stores who handle its Rexall and Purest lines of goods, in addition to handling many special deals that United Drug inaugurates. Thus United Drug is able to work with independent retailers at the same time as it engages in direct ownership of chain stores. United Drug, however, does not engage in general wholesaling but only sells its own goods. This company is, therefore, a manufacturer engaging directly in the retail business, and selling practically all the balance of its goods through agencies. That other manufacturers have attempted the agency method is well-known. Many of these manufacturers have discontinued the practice, while others continue in it and still others approximate it by their preferred list of retailers who gain additional discounts for their services to the manufacturers.

Without entering into a discussion of whether or not it is good business policy to attempt to carry water on both shoulders, especially during the present period, let it be suffice that there are many houses among the manufacturers who are attempting this difficult balancing feat in much the same manner as some wholesalers have long tried it. For after all, from a cold logical viewpoint, McKesson is not making any direct move to harm the independent retailers when it sells to chains or when it attempts to get chains to handle its line. If the plan behind the McKesson company is to exist on the profits from its own line of goods through its ability to give longer discounts to the independent retailers, then what difference should it make to the independent retailers whether the chains contribute to the profits that McKesson derives from this line so long as the prices are strictly maintained on all items in the line in all these stores? Chain stores will enter into business whether the independent retailers like it or not. Certainly the independent retailers can not object to the fact that McKesson might advance its position by selling to these chain stores on the same terms on which it sells the independent retailers if this business places McKesson in a firmer position in aiding the independent retailers. But there are those who are wont to cast reflections upon McKesson's dealing with the chains on exactly the same terms. This of course McKesson denies.

The Druggists' Supply Corporation on the other hand, is not engaging in any combined manufacturing effort, although practically all of the independent wholesalers making up the chain do some manufacturing, or at least packing of their own. At the same time, the D. S. C. is working on all sorts of combination deals with manufacturers in a manner similar to McKesson, and sundries especially are being sold in all sorts of attractive combinations which are supposed to aid the independent retailer in meeting the trick merchandising schemes of the chains. In these efforts the large wholesale groups have been moderately successful.

Pine Boards Bring Action

(*Continued from page 230*)

the responsibility when the situation becomes unbearable, they must expect price maintenance legislation to be passed. He states that these retailers must have relief from their predicament and that if the manufacturers, through their aid, do not produce this relief, the legislators will furnish the relief through legislation. In this manufacturer's opinion, price maintenance would cause untold damage to the business of the nationally known manufacturers, and while it might relieve the retailer to some extent, it would cause greater chaos than exists today and would furthermore cost the manufacturers far more than they would spend under present conditions in righting a wrong situation.

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